10/687381

STIC Search Report

EIC 1700

STIC Database Tracking Number 175351

TO:	From:
Dennis Cordray Location: REM 7D34 Art Unit : 1731 January 4, 2006 Case Serial Number: 10/687381	Usha Shrestha Location: EIC 1700 REMSEN 4B28 Phone: 571/272-3519 usha.shrestha@uspto.gov

Search Notes

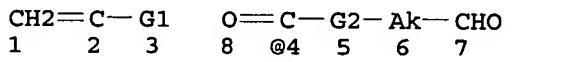
1/6/03 Eff. date

```
=> fil reg
FILE 'REGISTRY' ENTERED AT 11:49:06 ON 04 JAN 2006

=> d his

     FILE 'HCAPLUS' ENTERED AT 07:39:38 ON 04 JAN 2006
L1             3 S US20050082023/PN
                 SEL RN

     FILE 'REGISTRY' ENTERED AT 07:40:08 ON 04 JAN 2006
L2             7 S E1-E7

     FILE 'LREGISTRY' ENTERED AT 07:43:22 ON 04 JAN 2006
L3               STR

     FILE 'REGISTRY' ENTERED AT 07:51:34 ON 04 JAN 2006
L4               SCR 2043
L5            50 S L3 AND L4
L6               STR
L7               STR L6
L8            40 S L3 AND L7 AND L4

     FILE 'LREGISTRY' ENTERED AT 09:25:21 ON 04 JAN 2006
L9               STR L3
L10              STR L9
L11            0 S L9 AND L10 AND L7 AND L4

     FILE 'REGISTRY' ENTERED AT 09:29:07 ON 04 JAN 2006
L12            1 S L9 AND L10 AND L7 AND L4
L13              STR
L14           13 S L9 AND L10 AND L7 AND L4 FUL
L15              STR L9
L16            5 S L15 AND L10 AND L7 AND L4
L17              STR L15
L18            4 S L17 AND L10 AND L7 AND L4
L19              STR L17
L20            1 S L19 AND L10 AND L7 AND L4
L21            1 S L7 AND L19 AND L4
L22              STR L19
L23          271 S L17 AND L10 AND L7 AND L4 FUL
L24            5 S L23 AND L2
L25          271 S L14 OR L23
                 SAV L25 COR381/A

    FILE 'HCAPLUS' ENTERED AT 11:44:56 ON 04 JAN 2006
L26          106 S L25
L27           10 S L26 AND WET(A)STRENGTH?
L28            3 S L27 AND L1
L29           11 S L26 AND PAPER?/SC,SX
L30           15 S L27 OR L29
L31           15 S L26 AND (WETSTRENGTH? OR WET(A)STRENGTH? OR WET?)
L32           19 S L30 OR L31


=> d que l32
L4               SCR 2043
L7               STR

1 N +
```

NODE ATTRIBUTES:
CHARGE IS *+ AT 1
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 1

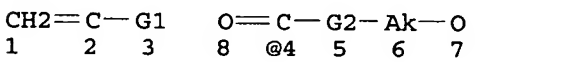
STEREO ATTRIBUTES: NONE
L9 STR



VAR G1=4/CHO
VAR G2=O/N
NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 8

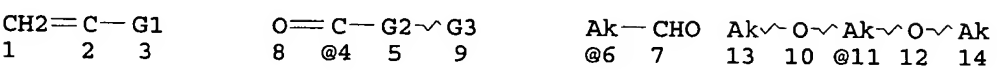
STEREO ATTRIBUTES: NONE
L10 STR



VAR G1=4/OH
VAR G2=O/N
NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 8

STEREO ATTRIBUTES: NONE
L14 13 SEA FILE=REGISTRY SSS FUL L9 AND L10 AND L7 AND L4
L17 STR



VAR G1=4/CHO
VAR G2=O/N
VAR G3=6/11
NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 14

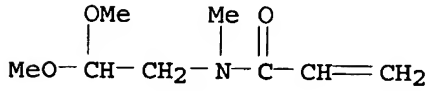
```
STEREO ATTRIBUTES: NONE
L23          271 SEA FILE=REGISTRY SSS FUL L17 AND L10 AND L7 AND L4
L25          271 SEA FILE=REGISTRY ABB=ON  PLU=ON  L14 OR L23
L26          106 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L25
L27           10 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L26 AND WET(A)STRENGTH
                 ?
L29           11 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L26 AND PAPER?/SC,SX
L30           15 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L27 OR L29
L31           15 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L26 AND (WETSTRENGTH?
                 OR WET(A)STRENGTH? OR WET?)
L32           19 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L30 OR L31


=> fil hcap
FILE 'HCAPLUS' ENTERED AT 11:49:26 ON 04 JAN 2006


=> d l32 1-19 ibib abs hitstr hitind


L32  ANSWER 1 OF 19  HCAPLUS  COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER:         2005:348695  HCAPLUS
DOCUMENT NUMBER:          142:394025
TITLE:                    Temporary wet strength
                          additives for fibrous structures and sanitary
                          tissue products
INVENTOR(S):              Barcus, Robert Lee; Mohammadi, Khosrow Parviz;
                          Leimbach, Angela Marie; Kelly, Stephen Robert
PATENT ASSIGNEE(S):       USA
SOURCE:                   U.S. Pat. Appl. Publ., 13 pp., Cont.-in-part
                          of U.S. Ser. No. 687,381.
                          CODEN: USXXCO
DOCUMENT TYPE:            Patent
LANGUAGE:                 English
FAMILY ACC. NUM. COUNT:   3
PATENT INFORMATION:

     PATENT NO.           KIND   DATE        APPLICATION NO.         DATE
     ---------------      ----   --------    --------------------
     --------
     US 2005082024         A1    20050421    US 2004-958016
                                                                    2004
                                                                    1004
     US 2005082023         A1    20050421    US 2003-687381
                                                                    2003
                                                                    1016
PRIORITY APPLN. INFO.:                       US 2003-687381      A2
                                                                    2003
                                                                    1016
```

AB Temporary **wet strength** additive comprises a polymer backbone containing a cocrosslinking monomeric unit, preferably a reversible co-crosslinking monomeric unit, especially in the presence of water, a homocrosslinking monomeric unit and a cationic monomeric unit,. The fibrous structures and sanitary tissue products containing the temporary **wet strength** additives exhibit high initial **wet** tensile strength and improved flushability and/or reduced-clogging properties. Thus N-(2,2-dimethoxyethyl)-N-Me acrylamide 1.006, 2-hydroxyethyl acrylate 5.645, [3-(methacryloylamino)propyl]trimet

CN 1-Propanaminium, N,N,N-trimethyl-3-[(2-methyl-1-oxo-2-propenyl)amino]-, chloride, polymer with N-(2,2-dimethoxyethyl)-N-methyl-2-propenamide, 2-hydroxyethyl 2-propenoate and oxirane, graft (9CI) (CA INDEX NAME)

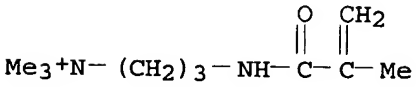
CM 1

CRN 95984-13-7
CMF C8 H15 N O3



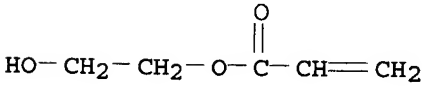
CM 2

CRN 51410-72-1
CMF C10 H21 N2 O . Cl



CM 3

CRN 818-61-1
CMF C5 H8 O3



CM 4

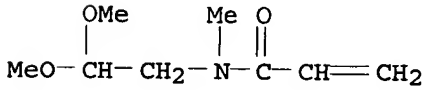
CRN 75-21-8
CMF C2 H4 O

IC ICM D21H021-20
INCL 162123000; 162164100; 525329400; 525329700; 525330300
CC 43-7 (Cellulose, Lignin, **Paper**, and Other Wood Products)
ST acrylic polymer temporary **wet strength**

propenyl)amino]-, chloride, polymer with N-(2,2-dimethoxyethyl)-N-methyl-2-propenamide, 2-hydroxyethyl 2-propenoate and α-(1-oxo-2-propenyl)-ω-hydroxypoly(oxy-1,2-ethanediyl), graft (9CI) (CA INDEX NAME)

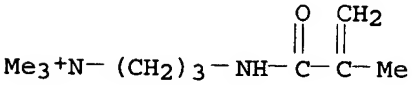
CM 1

CRN 95984-13-7
CMF C8 H15 N O3



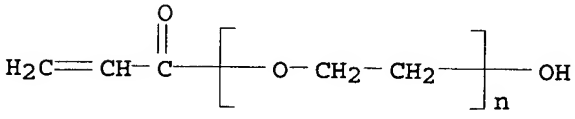
CM 2

CRN 51410-72-1
CMF C10 H21 N2 O . Cl



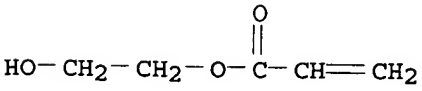
CM 3

CRN 26403-58-7
CMF (C2 H4 O)n C3 H4 O2
CCI PMS



CM 4

CRN 818-61-1
CMF C5 H8 O3

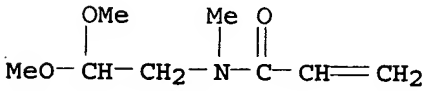


RN 849931-53-9 HCAPLUS

propenyl)amino]-, chloride, polymer with N-(2,2-dimethoxyethyl)-N-methyl-2-propenamide, 1-ethenyl-2-pyrrolidinone and 2-hydroxyethyl 2-propenoate (9CI) (CA INDEX NAME)

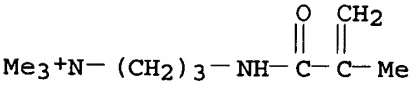
CM 1

CRN 95984-13-7
CMF C8 H15 N O3



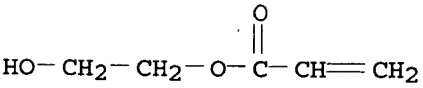
CM 2

CRN 51410-72-1
CMF C10 H21 N2 O . Cl



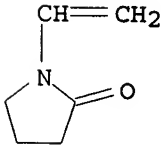
CM 3

CRN 818-61-1
CMF C5 H8 O3



CM 4

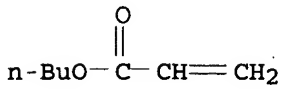
CRN 88-12-0
CMF C6 H9 N O



RN 849931-51-7 HCAPLUS
CN 1-Propanaminium, N,N,N-trimethyl-3-[(2-methyl-1-oxo-2-

CM 4

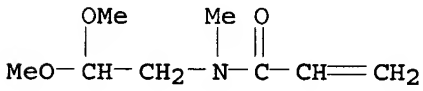
CRN 141-32-2
CMF C7 H12 O2



RN 849926-98-3 HCAPLUS
CN 1-Propanaminium, N,N,N-trimethyl-3-[(2-methyl-1-oxo-2-propenyl)amino]-, chloride, polymer with N-(2,2-dimethoxyethyl)-N-methyl-2-propenamide and 2-hydroxyethyl 2-propenoate (9CI) (CA INDEX NAME)

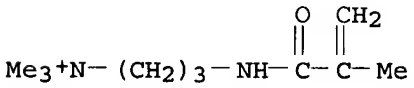
CM 1

CRN 95984-13-7
CMF C8 H15 N O3



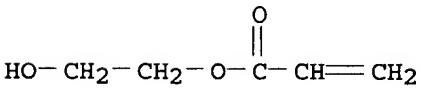
CM 2

CRN 51410-72-1
CMF C10 H21 N2 O . Cl



CM 3

CRN 818-61-1
CMF C5 H8 O3



RN 849927-00-0 HCAPLUS
CN 1-Propanaminium, N,N,N-trimethyl-3-[(2-methyl-1-oxo-2-

hyl ammonium chloride 0.763 g were polymerized in the presence of 0.0475 g 2,2'-azobis(2-amidinopropane)dihydrochloride in 2-propanol 5 and water 45 mL for 20 h at 60° and protected with acetal group, hydrolyzed, adjusted to pH 5 with 1 N NaOH and then dialyzed against water for 16 h to give a polymer with mol. weight 140,000.

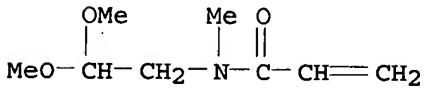
IT **849824-74-4DP**, hydrolyzed **849926-98-3DP**, N-(2,2-Dimethoxyethyl)-N-methyl acrylamide-2-hydroxyethyl acrylate-[3-(methacryloylamino)propyl]trimethyl ammonium chloride copolymer, hydrolyzed **849927-00-0DP**, hydrolyzed **849931-51-7DP**, hydrolyzed **849931-53-9P**
(**wet strength** additive; temporary **wet strength** additives for fibrous structures and sanitary tissue products)

RN 849824-74-4 HCAPLUS

CN 1-Propanaminium, N,N,N-trimethyl-3-[(2-methyl-1-oxo-2-propenyl)amino]-, chloride, polymer with butyl 2-propenoate, N-(2,2-dimethoxyethyl)-N-methyl-2-propenamide and 2-hydroxyethyl 2-propenoate (9CI) (CA INDEX NAME)

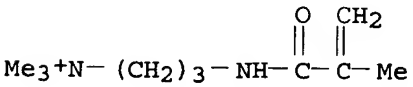
CM 1

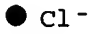
CRN 95984-13-7
CMF C8 H15 N O3



CM 2

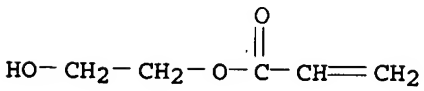
CRN 51410-72-1
CMF C10 H21 N2 O . Cl





CM 3

CRN 818-61-1
CMF C5 H8 O3



additive; paper acrylic **wet strength** additive flushability; sanitary tissue product temporary **wet strength**

IT Cellulose pulp
(kraft, softwood; temporary **wet strength** additives for fibrous structures and sanitary tissue products)

IT Paper
(tissue; temporary **wet strength** additives for fibrous structures and sanitary tissue products)

IT 107-22-2DP, Glyoxal, reaction products with acrylamide copolymer **849824-74-4DP**, hydrolyzed **849926-98-3DP**, N-(2,2-Dimethoxyethyl)-N-methyl acrylamide-2-hydroxyethyl acrylate-[3-(methacryloylamino)propyl]trimethyl ammonium chloride copolymer, hydrolyzed 849926-99-4DP, Acrylamide-2-hydroxyethyl acrylate-[3-(methacryloylamino)propyl]trimethyl ammonium chloride-N-vinylpyrrolidone copolymer, reaction products with glyoxal **849927-00-0DP**, hydrolyzed **849931-51-7DP**, hydrolyzed **849931-53-9P**
(**wet strength** additive; temporary **wet strength** additives for fibrous structures and sanitary tissue products)

L32 ANSWER 2 OF 19 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:346600 HCAPLUS
DOCUMENT NUMBER: 142:394024
TITLE: Fibrous structures exhibiting improved **wet strength** properties
INVENTOR(S): Mohammadi, Khosrow Parviz; Barcus, Robert Lee; Leimbach, Angela Marie; Kelly, Stephen Robert
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 16 pp., Cont.-in-part of U.S. Ser. No. 687,381.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 3
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2005082026	A1	20050421	US 2004-958029 — check DP	2004 1004
US 2005082023	A1	20050421	US 2003-687381	2003 1016
PRIORITY APPLN. INFO.:			US 2003-687381 A2	2003 1016

AB Fibrous structures and/or sanitary tissue products comprising such fibrous structures, more particularly to fibrous structures and/or sanitary tissue products that exhibit improved **wet strength** properties, especially temporary **wet strength** properties, as compared to fibrous structures and/or sanitary tissue products that contain conventional **wet strength** additives, are disclosed.

IT **849824-74-4P**, Butyl acrylate-N-(2,2-dimethoxyethyl)-N-methyl acrylamide-2-hydroxyethyl acrylate-[3-

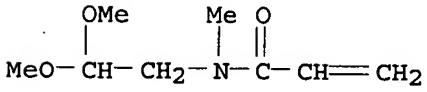
(methacryloylamino)propyl] trimethyl ammonium chloride copolymer (**wet strength** additive; fibrous structures exhibiting improved **wet strength** properties)

RN 849824-74-4 HCAPLUS

CN 1-Propanaminium, N,N,N-trimethyl-3-[(2-methyl-1-oxo-2-propenyl)amino]-, chloride, polymer with butyl 2-propenoate, N-(2,2-dimethoxyethyl)-N-methyl-2-propenamide and 2-hydroxyethyl 2-propenoate (9CI) (CA INDEX NAME)

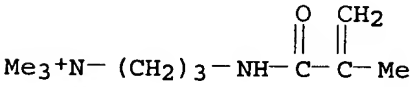
CM 1

CRN 95984-13-7
CMF C8 H15 N O3



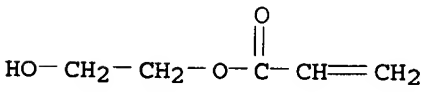
CM 2

CRN 51410-72-1
CMF C10 H21 N2 O . Cl



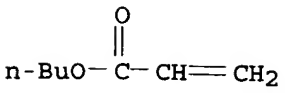
CM 3

CRN 818-61-1
CMF C5 H8 O3



CM 4

CRN 141-32-2
CMF C7 H12 O2



IC ICM D21H021-20
INCL 162164100; 162123000; 162158000
CC 43-7 (Cellulose, Lignin, **Paper**, and Other Wood Products)
ST **wet strength** sanitary tissue
IT Paper
(tissue, sanitary; fibrous structures exhibiting improved **wet strength** properties)
IT **849824-74-4P**, Butyl acrylate-N-(2,2-dimethoxyethyl)-N-methyl acrylamide-2-hydroxyethyl acrylate-[3-(methacryloylamino)propyl] trimethyl ammonium chloride copolymer (**wet strength** additive; fibrous structures exhibiting improved **wet strength** properties)

L32 ANSWER 3 OF 19 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:346599 HCAPLUS
DOCUMENT NUMBER: 142:394023
TITLE: Temporary **wet strength** resins for fibrous structures and sanitary tissue products with improved flushability and/or decaying properties
INVENTOR(S): Barcus, Robert Lee; Mohammadi, Khosrow Parviz; Leimbach, Angela Marie; Kelly, Stephen Robert
PATENT ASSIGNEE(S): The Procter & Gamble Company, USA
SOURCE: U.S. Pat. Appl. Publ., 13 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 3
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2005082023	A1	20050421	US 2003-687381	2003 1016
US 2005082024	A1	20050421	US 2004-958016	2004 1004
US 2005082026	A1	20050421	US 2004-958029	2004 1004
WO 2005038131	A2	20050428	WO 2004-US33653	2004 1013
WO 2005038131	A3	20050616		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH,
CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU,
MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI,
CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
WO 2005038132 A2 20050428 WO 2004-US33654
2004
1013
WO 2005038132 A3 20050616
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ,
CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG,
ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP,
KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL,
PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR,
TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH,
CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU,
MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI,
CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
PRIORITY APPLN. INFO.: US 2003-687381 A2
2003
1016

AB The temporary **wet strength** resins comprises a polymer backbone containing a cocrosslinking monomeric unit, preferably a reversible cocrosslinking monomeric unit, especially in the presence of water, a homocrosslinking monomeric units and a cationic monomeric unit. The fibrous structures and sanitary tissue products containing the temporary **wet strength** resins exhibit high initial **wet** tensile strength and improved flushability properties. Thus N-(2,2-dimethoxyethyl)-N-Me acrylamide 1.006, 2-hydroxyethyl acrylate 5.645, [3-(methacryloylamino)propyl]trimethyl ammonium chloride 0.763 g were polymerized in the presence of 0.0475 g 2,2'-azobis(2-amidinopropane)dihydrochloride in 2-propanol 5 and water 45 mL for 20 h at 60° and protected with acetal group, hydrolyzed, adjusted to pH 5 with 1 N NaOH and then dialyzed against water for 16 h to give a polymer with mol. weight 140,000.

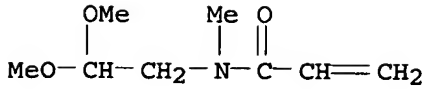
IT **849824-74-4DP**, hydrolyzed **849926-98-3DP**, hydrolyzed **849927-00-0DP**, hydrolyzed
(**wet strength** promotor; temporary **wet-strength** resins for fibrous structures and sanitary tissue products with improved flushability and/or decaying properties)

RN 849824-74-4 HCAPLUS

CN 1-Propanaminium, N,N,N-trimethyl-3-[(2-methyl-1-oxo-2-propenyl)amino]-, chloride, polymer with butyl 2-propenoate, N-(2,2-dimethoxyethyl)-N-methyl-2-propenamide and 2-hydroxyethyl 2-propenoate (9CI) (CA INDEX NAME)

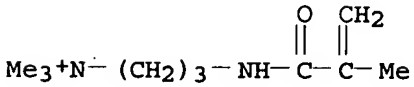
CM 1

CRN 95984-13-7
CMF C8 H15 N O3



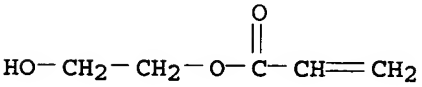
CM 2

CRN 51410-72-1
CMF C10 H21 N2 O . Cl



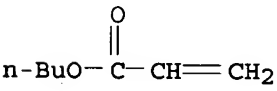
CM 3

CRN 818-61-1
CMF C5 H8 O3



CM 4

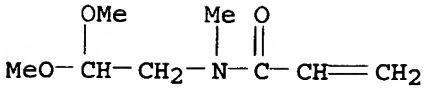
CRN 141-32-2
CMF C7 H12 O2



RN 849926-98-3 HCAPLUS
CN 1-Propanaminium, N,N,N-trimethyl-3-[(2-methyl-1-oxo-2-propenyl)amino]-, chloride, polymer with N-(2,2-dimethoxyethyl)-N-methyl-2-propenamide and 2-hydroxyethyl 2-propenoate (9CI) (CA INDEX NAME)

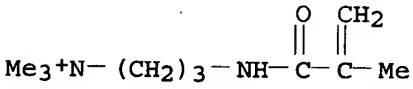
CM 1

CRN 95984-13-7
CMF C8 H15 N O3



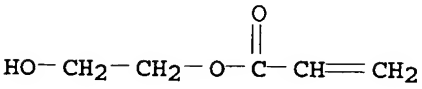
CM 2

CRN 51410-72-1
CMF C10 H21 N2 O . Cl



CM 3

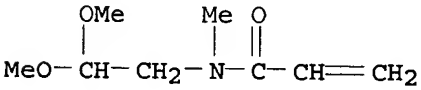
CRN 818-61-1
CMF C5 H8 O3



RN 849927-00-0 HCAPLUS
CN 1-Propanaminium, N,N,N-trimethyl-3-[(2-methyl-1-oxo-2-propenyl)amino]-, chloride, polymer with N-(2,2-dimethoxyethyl)-N-methyl-2-propenamide, 1-ethenyl-2-pyrrolidinone and 2-hydroxyethyl 2-propenoate (9CI) (CA INDEX NAME)

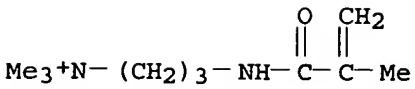
CM 1

CRN 95984-13-7
CMF C8 H15 N O3



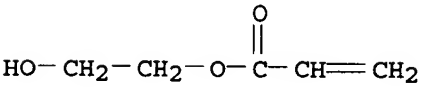
CM 2

CRN 51410-72-1
CMF C10 H21 N2 O . Cl



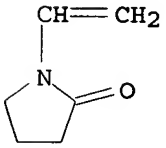
CM 3

CRN 818-61-1
CMF C5 H8 O3



CM 4

CRN 88-12-0
CMF C6 H9 N O



IC ICM D21H021-20
ICS D21H017-38
INCL 162123000; 162158000; 162164100; 162168100; 526264000; 526319000; 526303100
CC 43-7 (Cellulose, Lignin, **Paper**, and Other Wood Products)
ST temporary **wet strength** resin acrylic polymer paper; sanitary tissue product temporary **wet strength**
IT Medical goods
(dressings; temporary **wet-strength** resins for fibrous structures and sanitary tissue products with improved flushability and/or decaying properties)
IT Cellulose pulp
(kraft, softwood; temporary **wet-strength** resins for fibrous structures and sanitary tissue products with improved flushability and/or decaying properties)
IT Paper
(tissue; temporary **wet-strength** resins for fibrous structures and sanitary tissue products with improved flushability and/or decaying properties)
IT 107-22-2DP, Glyoxal, reaction products with acrylamide copolymer **849824-74-4DP**, hydrolyzed **849926-98-3DP**, hydrolyzed 849926-99-4DP, reaction products with glyoxal

849927-00-0DP, hydrolyzed
(**wet strength** promotor; temporary **wet-strength** resins for fibrous structures and sanitary tissue products with improved flushability and/or decaying properties)

L32 ANSWER 4 OF 19 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:671123 HCAPLUS
DOCUMENT NUMBER: 139:198975
TITLE: Paper of high bursting strength, sizes and (meth)acrylamide polymers therefor, and preparation thereof
INVENTOR(S): Kiyosada, Shunji; Endo, Akira; Iwata, Satoru; Ogawa, Masatomi
PATENT ASSIGNEE(S): Japan PMC Corporation, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 28 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003238631	A2	20030827	JP 2002-47116	20020222
CA 2477226	AA	20030828	CA 2003-2477226	20030221
WO 2003070796	A1	20030828	WO 2003-JP1918	20030221
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
EP 1486515	A1	20041215	EP 2003-706991	20030221
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
US 2005272889	A1	20051208	US 2005-505346	20050720

PRIORITY APPLN. INFO.:		
JP 2002-47116	A	20020222
WO 2003-JP1918	W	

2003
0221

AB The polymers comprise (A) MeC:CH2R1N+R2R3R4X- [R1 = C1-4 alkylene; R2-R4 = H, C≤22 alkyl excluding the case where 2 or 3 of them are H; X- = (in)organic acid anion], (B) (meth)acrylamide, and (C) ionic monomers excluding A. In the process, ≥1 of the monomer A-C are polymerized in the first stage of polymerization and remainders of the monomers are added to the reactors and then polymerized Thus, 66.3:2.0:1.5:0.20 (mol) acrylamide (I)/dimethylaminoethyl methacrylate/itaconic acid (II)/2-propen-1-aminium N,N,N,2-tetra-Me chloride (III) was polymerized in the presence of ammonium persulfate and further polymerized in the presence of 27.95:1.5:0.5:0.05 (mol) I/acryloyloxyethyldimethylbenzylammonium chloride/II/III to give a polymer. Paper hand-made from corrugated wastepaper by use of a size containing the polymer showed internal bonding strength 289 mJ, ash 7.41%, and Stoeckigt sizing degree 120 s.

IT **585539-82-8P**
(sizes containing (meth)acrylamide copolymers and imparting paper with high bursting and tear strength)

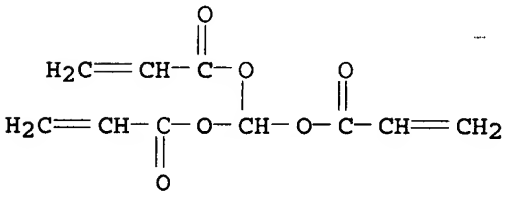
RN 585539-82-8 HCAPLUS

CN Benzenemethanaminium, N,N-dimethyl-N-[2-[(1-oxo-2-propenyl)oxy]ethyl]-, chloride, polymer with hexahydro-1,3,5-tris(1-oxo-2-propenyl)-1,3,5-triazine, N-(2-hydroxyethyl)-N,N,2-trimethyl-2-propen-1-aminium chloride, methylenebutanedioic acid, methylidyne tri-2-propenoate, 2-propenamide and sodium 2-methyl-2-propene-1-sulfonate (9CI) (CA INDEX NAME)

not aldehyde w/ or alcohol Claimed structure

CM 1

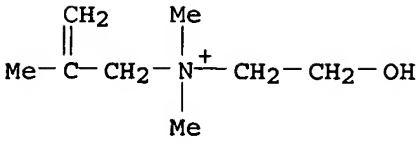
CRN 119495-38-4
CMF C10 H10 O6



Not A or B

CM 2

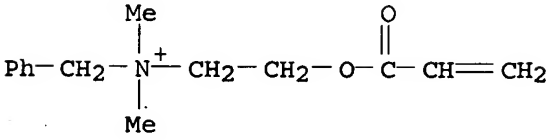
CRN 91485-07-3
CMF C8 H18 N O . Cl



● Cl⁻

CM 3

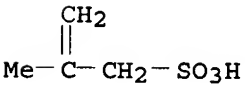
CRN 46830-22-2
CMF C14 H20 N O2 . Cl



● Cl⁻

CM 4

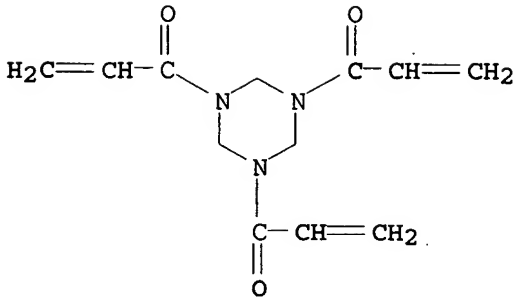
CRN 1561-92-8
CMF C4 H8 O3 S . Na



● Na

CM 5

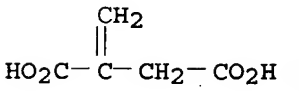
CRN 959-52-4
CMF C12 H15 N3 O3



W7.

CM 6

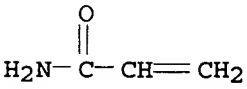
CRN 97-65-4
CMF C5 H6 O4



not acidic but nucleophilic

CM 7

CRN 79-06-1
CMF C3 H5 N O



IC ICM C08F220-56
ICS C08F002-00; C08F226-02; C08F228-02; D21H017-45; D21H019-20; D21H021-18; D21H021-10; D21H021-16
CC 43-7 (Cellulose, Lignin, **Paper**, and Other Wood Products)
Section cross-reference(s): 38
IT 585539-63-5P 585539-64-6P 585539-66-8P 585539-68-0P
585539-70-4P 585539-72-6P 585539-73-7P 585539-75-9P
585539-77-1P 585539-78-2P 585539-80-6P 585539-81-7P
585539-82-8P 585539-83-9P 585540-02-9P
(sizes containing (meth)acrylamide copolymers and imparting paper with high bursting and tear strength)

L32 ANSWER 5 OF 19 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1998:795063 HCAPLUS
DOCUMENT NUMBER: 130:53878
TITLE: Amphoteric aldehyde polymers, their manufacture and use as temporary **wet -strength** or dry-strength resins for paper
INVENTOR(S): Crisp, Mark T.; Riehle, Richard J.
PATENT ASSIGNEE(S): Hercules Incorporated, USA
SOURCE: PCT Int. Appl., 50 pp.

CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9854237	A1	19981203	WO 1998-US10714	1998 0526
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
US 6197919	B1	20010306	US 1997-866364	1997 0530
CA 2261960	AA	19981203	CA 1998-2261960	1998 0526
AU 9875019	A1	19981230	AU 1998-75019	1998 0526
AU 728064	B2	20010104		
EP 915918	A1	19990519	EP 1998-922494	1998 0526
R: BE, DE, ES, FR, GB, IT, SE, FI				
BR 9804940	A	19990908	BR 1998-4940	1998 0526
ZA 9804693	A	19990126	ZA 1998-4693	1998 0601
TW 510938	B	20021121	TW 1998-87108416	1998 0626
PRIORITY APPLN. INFO.:			US 1997-866364 A	1997 0530
			WO 1998-US10714 W	1998 0526

AB The resins comprise amphoteric polymers produced through polymerization of an anionic monomer, a monomer containing aldehyde functionality and a cationic monomer and provide impregnated paper which is easily repulped. A typical polymer was manufactured by radical polymerization of acrylic acid 2.7, N-(2,2-dimethoxyethyl)-N-methylacrylamide 12.99, and [3-(methacryloylamino)propyl]trimethylammonium chloride 16.74 g and hydrolysis of the acetal groups.

IT **217188-20-0DP**, hydrolyzed **217188-21-1DP**, hydrolyzed

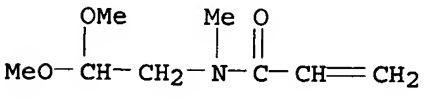
(amphoteric aldehyde polymers for temporary **wet-strength** or dry-strength resins for repulpable paper)

RN 217188-20-0 HCAPLUS

CN 1-Propanaminium, N,N,N-trimethyl-3-[(2-methyl-1-oxo-2-propenyl)amino]-, chloride, polymer with N-(2,2-dimethoxyethyl)-N-methyl-2-propenamide and 2-propenoic acid (9CI) (CA INDEX NAME)

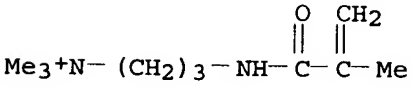
CM 1

CRN 95984-13-7
CMF C8 H15 N O3



CM 2

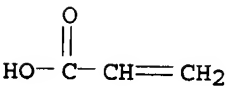
CRN 51410-72-1
CMF C10 H21 N2 O . Cl



● Cl^-

CM 3

CRN 79-10-7
CMF C3 H4 O2

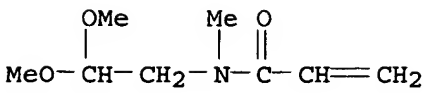


RN 217188-21-1 HCAPLUS

CN Ethanaminium, N,N,N-trimethyl-2-[(2-methyl-1-oxo-2-propenyl)oxy]-, chloride, polymer with N-(2,2-dimethoxyethyl)-N-methyl-2-propenamide and 2-methyl-2-propenoic acid (9CI) (CA INDEX NAME)

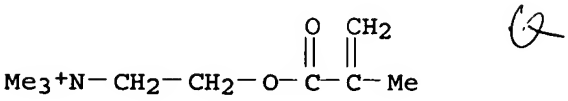
CM 1

CRN 95984-13-7
CMF C8 H15 N O3



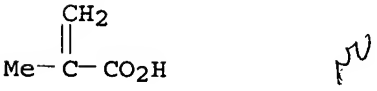
CM 2

CRN 5039-78-1
CMF C9 H18 N O2 . Cl



CM 3

CRN 79-41-4
CMF C4 H6 O2



IC ICM C08F220-04
ICS C08F220-34; D21H017-45
CC 43-7 (Cellulose, Lignin, **Paper**, and Other Wood Products)
Section cross-reference(s): 35
IT Newsprint
Paperboard
(amphoteric aldehyde polymers for temporary **wet-strength** or dry-strength resins for repulpable paper)
IT Polyelectrolytes
(amphoteric; amphoteric aldehyde polymers for temporary **wet-strength** or dry-strength resins for repulpable paper)
IT Paper
(kraft; amphoteric aldehyde polymers for temporary **wet-strength** or dry-strength resins for repulpable paper)
IT Aldehydes, uses
Quaternary ammonium compounds, uses
(polymers; amphoteric aldehyde polymers for temporary **wet-strength** or dry-strength resins for repulpable paper)
IT **217188-20-0DP**, hydrolyzed **217188-21-1DP**, hydrolyzed
(amphoteric aldehyde polymers for temporary **wet-strength** or dry-strength resins for repulpable paper)

IT 122-07-6, Methylaminoacetaldehyde dimethyl acetal 814-68-6, Acryloyl chloride
(monomer precursor; amphoteric aldehyde polymers for temporary **wet-strength** or dry-strength resins for repulpable paper)
IT 95984-13-7P
(monomer; amphoteric aldehyde polymers for temporary **wet-strength** or dry-strength resins for repulpable paper)
REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L32 ANSWER 6 OF 19 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1998:724222 HCAPLUS
DOCUMENT NUMBER: 130:53727
TITLE: Active energy ray-curable emulsions containing reactive emulsifiers
INVENTOR(S): Hagiwara, Yuji; Horinouchi, Masatoshi; Nakahara, Yutaka
PATENT ASSIGNEE(S): Asahi Denka Kogyo K. K., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 14 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

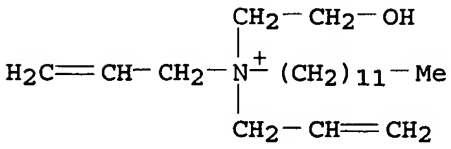
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 10298211	A2	19981110	JP 1997-109604	1997 0425
PRIORITY APPLN. INFO.:			JP 1997-109604	1997 0425

AB Title emulsions, showing improved stability and giving heat-resistant colorless coatings suitable for printing paper, contain (A) compds. having ≥1 C:C bond and (B) compds. having ≥1 C:C bond and nonionic and/or cationic hydrophilic groups. Thus, pentaerythritol tetraacrylate 30, dipentaerythritol pentaacrylate 50, hexaethylene glycol acrylate Ph ether 10, polyethylene glycol glycerin ether nonylphenyl allyl ether 5, and hydroxycyclohexyl Ph ketone 5 parts were mixed in 40 parts water to give a title emulsion showing no change in dispersion state, particle degree, and viscosity after 20 days at 50°. Then, the emulsion was applied on a polyester sheet and UV-irradiated to give a coating showing no discoloration after 30 min at 120°.
IT **217311-48-3P 217311-50-7P**
(active energy ray-curable emulsions containing reactive emulsifiers for coatings showing discoloration prevention)
RN 217311-48-3 HCAPLUS
CN 1-Dodecanaminium, N-(2-hydroxyethyl)-N,N-di-2-propenyl-, chloride, polymer with 2,2-bis[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl di-2-propenoate, 2-[[3-hydroxy-2,2-bis[[(1-oxo-2-propenyl)oxy]methyl]propoxy]methyl]-2-[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl di-2-propenoate and

17-phenoxy-3,6,9,12,15-pentaoxaheptadec-1-yl 2-propenoate, graft (9CI) (CA INDEX NAME)

CM 1

CRN 216454-91-0
CMF C20 H40 N O . Cl

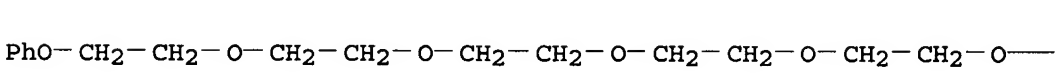


● Cl⁻

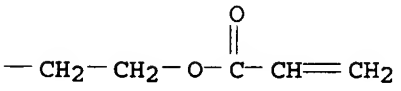
CM 2

CRN 63873-01-8
CMF C21 H32 O8

PAGE 1-A

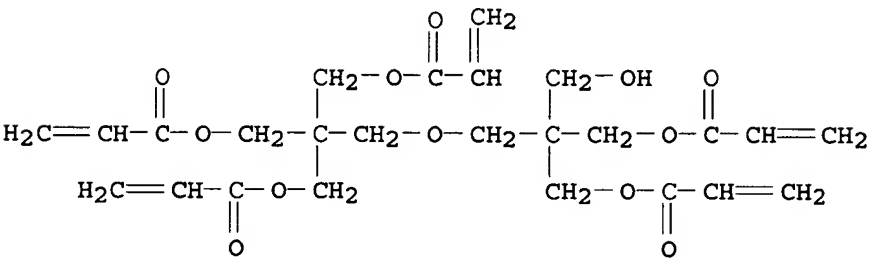


PAGE 1-B



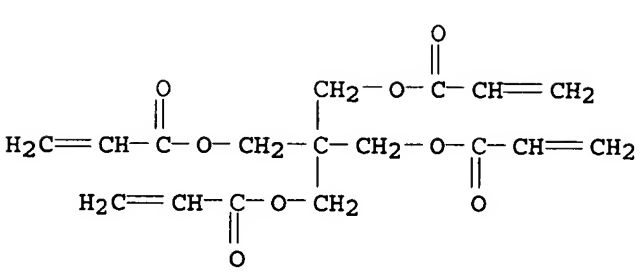
CM 3

CRN 60506-81-2
CMF C25 H32 O12



CM 4

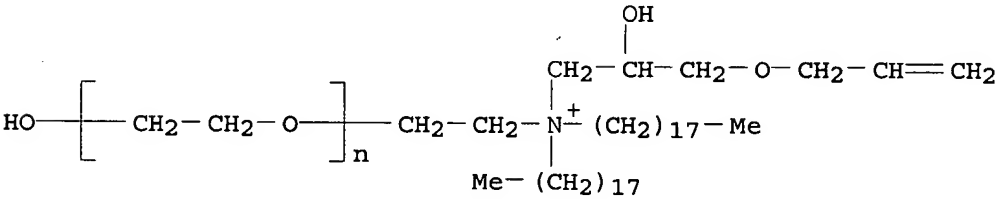
CRN 4986-89-4
CMF C17 H20 O8



RN 217311-50-7 HCAPLUS
CN 2-Propenoic acid, 2,2-bis[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl ester, polymer with 2-[[3-hydroxy-2,2-bis[[(1-oxo-2-propenyl)oxy]methyl]propoxy]methyl]-2-[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl di-2-propenoate, α-[2-[[2-hydroxy-3-(2-propenyloxy)propyl]dioctadecyliminio]ethyl]-ω-hydroxypoly(oxy-1,2-ethanediyl) chloride and α-(1-oxo-2-propenyl)-ω-phenoxypoly(oxy-1,2-ethanediyl), graft (9CI) (CA INDEX NAME)

CM 1

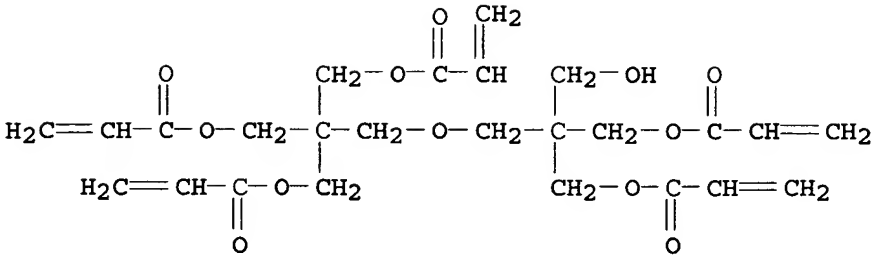
CRN 217311-49-4
CMF (C2 H4 O)n C44 H90 N O3 . Cl
CCI PMS



● Cl⁻

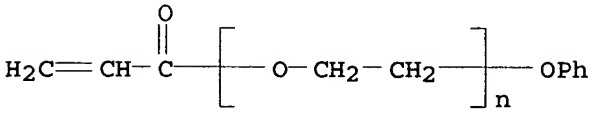
CM 2

CRN 60506-81-2
CMF C25 H32 O12



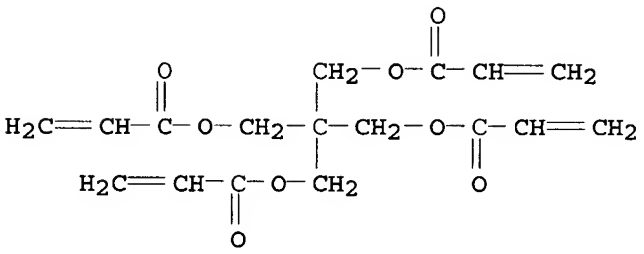
CM 3

CRN 56641-05-5
CMF (C2 H4 O)n C9 H8 O2
CCI PMS



CM 4

CRN 4986-89-4
CMF C17 H20 O8



IC ICM C08F002-46
ICS C08F012-24; C08F016-04; C08F016-26; C08F016-28; C08F018-04; C08F020-28; C08F020-30; C08F026-02

CC 42-7 (Coatings, Inks, and Related Products)
Section cross-reference(s): **43**, 46

IT 216863-71-7P, Dipentaerythritol pentaacrylate-ethylene oxide-hexaethylene glycol acrylate phenyl ether-pentaerythritol tetraacrylate graft copolymer 217310-64-0P 217311-47-2P **217311-48-3P 217311-50-7P** 217456-10-5P, Dipentaerythritol pentaacrylate-hexaethylene glycol acrylate phenyl ether-pentaerythritol tetraacrylate-polyethylene glycol glycerin ether nonylphenyl allyl ether graft copolymer 217456-12-7P 217456-61-6P, Dipentaerythritol pentaacrylate-hexaethylene glycol acrylate phenyl ether-pentaerythritol tetraacrylate-polyethylene glycol (1-propenyl)(nonyl)phenyl ether graft copolymer 217475-95-1P,

Dipentaerythritol pentaacrylate-hexaethylene glycol acrylate phenyl ether-pentaerythritol tetraacrylate-ethylene oxide-propylene oxide copolymer allyl ether graft copolymer (active energy ray-curable emulsions containing reactive emulsifiers for coatings showing discoloration prevention)

L32 ANSWER 7 OF 19 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1998:143433 HCAPLUS
DOCUMENT NUMBER: 128:205973
TITLE: Cation-modified acrylic copolymer compositions and antistatic transparent coatings having good water and abrasion resistance thereof
INVENTOR(S): Hotta, Hiroshi; Seo, Keiko
PATENT ASSIGNEE(S): Daiichi Kogyo Seiyaku Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 10060057	A2	19980303	JP 1996-218485	19960820

PRIORITY APPLN. INFO.: JP 1996-218485 19960820

AB The compns. for the coatings comprise (A) 3-90 weight% cation-modified copolymers composed of 70-99 mol% CH2CH2 (I), 0-15 mo.% alkyl acrylates CH2CH(CO2R1) (II; R1 = C1-4 alkyl), and 1-15 mol% acrylamides CH2CH(CONHR2N+R3R4R5 X-) (III; R2 = C2-8 alkylene; R3-R5 = C1-12 alkyl, C7-12 arylalkyl, C6-12 cycloalkyl; X = halo, SO4Me, SO4Et, R6SO3; R6 = same as R3-R5) and (B) 10-97 weight% free radical-polymerizable monomers. Thus, 20 parts 92:2:6 (mol%) I-II-III copolymer (R1 = R5 = Et, R2 = C2H4, R3-R4 = Me, X = SO4Et), 60 parts 2-hydroxyethyl acrylate, and 20 parts trimethylolpropane triacrylate were dissolved in 60:120 a mixture of MeOH and PhMe containing benzil di-Me ketal, applied onto a biaxially drawn poly(ethylene terephthalate) film, and exposed to UV to give test pieces showing surface sp. resistivity (SSR) after 24 h at 20° and 65% RH 6 + 108 Ω, good adhesion to the substrate, light transmittance 91.5%, haze 1.2%, SSR after being rubbed with **wet** fabric and kept at 20° and 65% RH for 24 h 8 + 108 Ω, and SSR after 30 min in 80°-water 4 x 109 Ω.

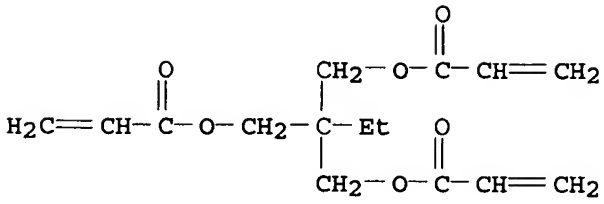
IT **203983-02-2P**
(acrylic polymer compns. for antistatic, transparent, and water- and abrasion-resistant coatings)

RN 203983-02-2 HCAPLUS

CN Ethanaminium, N-ethyl-N,N-dimethyl-2-[(1-oxo-2-propenyl)amino]-, ethyl sulfate, polymer with ethene, 2-ethyl-2-[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl di-2-propenoate, ethyl 2-propenoate and 2-hydroxyethyl 2-propenoate (9CI) (CA INDEX NAME)

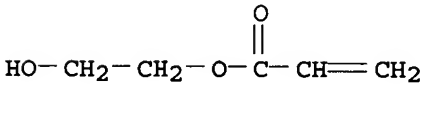
CM 1

CRN 15625-89-5
CMF C15 H20 O6



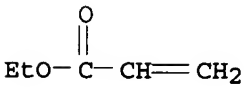
CM 2

CRN 818-61-1
CMF C5 H8 O3



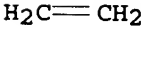
CM 3

CRN 140-88-5
CMF C5 H8 O2



CM 4

CRN 74-85-1
CMF C2 H4

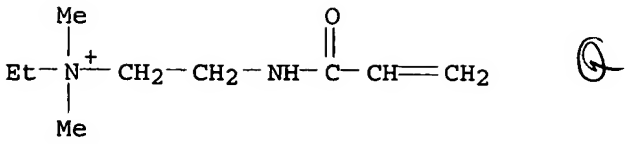


CM 5

CRN 155228-05-0
CMF C9 H19 N2 O . C2 H5 O4 S

CM 6

CRN 136390-64-2
CMF C9 H19 N2 O



CM 7

CRN 48028-76-8
CMF C2 H5 O4 S

IC ICM C08F255-02
ICS C09D005-00; C09D151-06; C08F210-02; C08F220-60
CC 42-7 (Coatings, Inks, and Related Products)
Section cross-reference(s): 37
IT **203983-02-2P** 203983-03-3P 203983-06-6P 203983-08-8P
203983-10-2P
(acrylic polymer compns. for antistatic, transparent, and water- and abrasion-resistant coatings)

L32 ANSWER 8 OF 19 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1995:708578 HCAPLUS
DOCUMENT NUMBER: 123:86407
TITLE: Alkoxysilyl-containing branched acrylamide copolymers as draining aids and strength agents for paper
INVENTOR(S): Kokuni, Masanaga; Takizawa, Satoshi; Ogawa, Masatomi
PATENT ASSIGNEE(S): Nippon Pmc Kk, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 07102496	A2	19950418	JP 1993-265499	19930930
JP 3186377	B2	20010711		

PRIORITY APPLN. INFO.: JP 1993-265499 19930930

AB The title copolymers are obtained from the polymerization of acrylamide compds., anionic vinyl compds., cationic vinyl compds., alkoxysilyl group-containing vinyl compds. and optionally nonionic monomers. Persulfate-initiated polymerization of acrylamide 90, acrylic acid 5, dimethylaminoethyl methacrylate 5 and methacryloylpropyltrimethoxysilane 0.3 mol gave a copolymer useful as **wet**-end additive for papermaking.

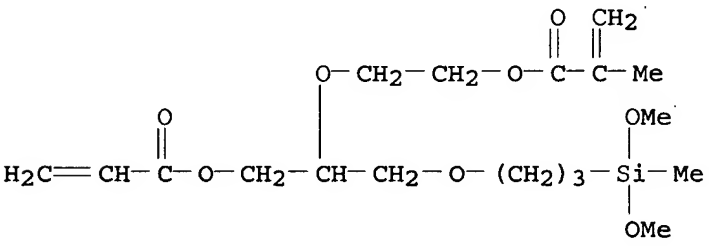
IT **165539-48-0**
(alkoxysilyl-containing branched acrylamide copolymers as draining aids and strength agents for paper)

RN 165539-48-0 HCAPLUS

CN Ethanaminium, N,N,N-trimethyl-2-[(2-methyl-1-oxo-2-propenyl)oxy]-, chloride, polymer with 2-(dimethylamino)ethyl 2-methyl-2-propenoate, 10-methoxy-10-methyl-4-[[(1-oxo-2-propenyl)oxy]methyl]-3,6,11-trioxa-10-siladodec-1-yl 2-methyl-2-propenoate, methylenebutanedioic acid, 2-propenamide and 2-propenenitrile (9CI) (CA INDEX NAME)

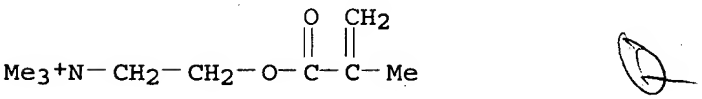
CM 1

CRN 165539-47-9
CMF C18 H32 O8 Si



CM 2

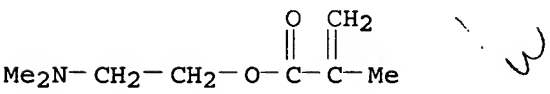
CRN 5039-78-1
CMF C9 H18 N O2 . Cl



● Cl⁻

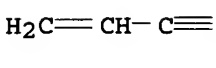
CM 3

CRN 2867-47-2
CMF C8 H15 N O2



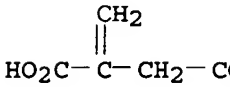
CM 4

CRN 107-13-1
CMF C3 H3 N



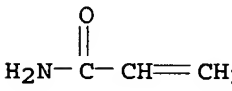
CM 5

CRN 97-65-4
CMF C5 H6 O4



CM 6

CRN 79-06-1
CMF C3 H5 N O



IC ICM D21H017-59
ICS C08F020-56; C08F030-08; D21H017-37
CC 43-7 (Cellulose, Lignin, **Paper**, and Other Wood Products)
Section cross-reference(s): 37
ST **wet** end additive acrylamide polymer; papermaking strength agent acrylamide polymer; draining aid acrylamide polymer; alkoxysilyl acrylamide polymer draining aid
IT 165539-46-8 **165539-48-0** 165539-49-1 165539-50-4 165539-51-5 165539-52-6
(alkoxysilyl-containing branched acrylamide copolymers as draining aids and strength agents for paper)

L32 ANSWER 9 OF 19 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1995:686776 HCAPLUS
DOCUMENT NUMBER: 123:59278
TITLE: Retention aids for papermaking and their preparation
INVENTOR(S): Shin, Jong Ho; Han, Sin Ho; Ow, Say Kyoun
PATENT ASSIGNEE(S): Korea Research Institute of Chemical Technology, S. Korea
SOURCE: PCT Int. Appl., 16 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

WO 9503450	A1	19950202	WO 1994-KR97	1994 0720
W: AU, CA, JP, US RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
KR 9615748	B1	19961120	KR 1993-13673	1993 0720
AU 9472398	A1	19950220	AU 1994-72398	1994 0720
JP 08507111	T2	19960730	JP 1994-505066	1994 0720
JP 2912951	B2	19990628		
US 5717046	A	19980210	US 1996-583050	1996 0119
PRIORITY APPLN. INFO.:			KR 1993-13673 A	1993 0720
			WO 1994-KR97 W	1994 0720

AB Retention aids for papermaking comprise cationic multiarmed star-like polymers DyA[B(CH2)nEpFq]x where A is a PO or Si residue, or polyvalent organic residue, B is OCO2, or NHCO, D is OH or NH2, E is an acrylamide or unsatd. amine residue, F is an aminoethyl or ammonioethyl ester of a (meth)acrylic polymer residue, y is 0-21, n is 3-6, p is 300-4000, and q is 0-1000. Pentaerythritol triacrylate was polymerized with acrylamide and dimethylaminoethyl acrylate Me chloride (2.5 + 10-4:0.2:0.05 mol)(mol. weight 2-3 + 105) and the polymer gave better retention of fines than than anionic or cationic polyacrylamides. The retention aid provides uniformity of the flocculated particle size, which makes it possible to retain flocculates without decreasing paper formation.

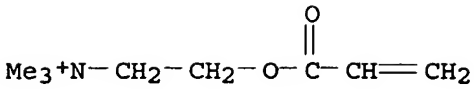
IT **165120-66-1P**
(starlike; retention aids for papermaking and their preparation)

RN 165120-66-1 HCAPLUS

CN Ethanaminium, N,N,N-trimethyl-2-[(1-oxo-2-propenyl)oxy]-, chloride, polymer with 2-(hydroxymethyl)-2-[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl di-2-propenoate and 2-propenamide (9CI) (CA INDEX NAME)

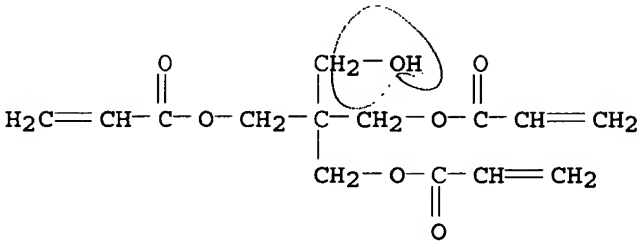
CM 1

CRN 44992-01-0
CMF C8 H16 N O2 . Cl



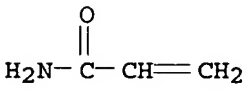
CM 2

CRN 3524-68-3
CMF C14 H18 O7



CM 3

CRN 79-06-1
CMF C3 H5 N O



IC ICM D21H017-20
CC 43-7 (Cellulose, Lignin, **Paper**, and Other Wood Products)
IT **165120-66-1P**
(starlike; retention aids for papermaking and their preparation)

L32 ANSWER 10 OF 19 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1992:216663 HCAPLUS
DOCUMENT NUMBER: 116:216663
TITLE: Manufacture of (meth)acrylamide copolymers as strengthening agents for paper
INVENTOR(S): Osada, Tadashi; Kajiwara, Yoichi; Natsuhara, Eisuke
PATENT ASSIGNEE(S): Arakawa Chemical Industries, Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

JP 04018190	A2	19920122	JP 1990-116628	1990 0501
PRIORITY APPLN. INFO.:			JP 1990-116628	1990 0501

AB The title copolymers are prepared from (meth)acrylamide, vinyl monomers containing cationic groups, tetrafunctional vinyl monomers, and, optionally, vinyl monomers containing anionic and/or nonionic groups. Redox polymerization of acrylamide 60, 80% aqueous acrylic acid 4, H2C:CMeCO2CH2CH2NMe2 7, and C(CH2O2CCH:CH2)4 (I) 0.05 part gave a copolymer which was used in the manufacture of paper from an aqueous slurry containing waste corrugated paperboard. The paper showed burst factor 2.92, vs. 2.59 with a copolymer prepared without I.

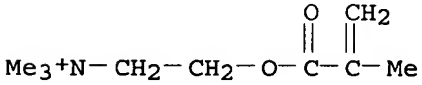
IT **141370-24-3**
(paper containing, for improved strength)

RN 141370-24-3 HCAPLUS

CN Ethanaminium, N,N,N-trimethyl-2-[(2-methyl-1-oxo-2-propenyl)oxy]-, chloride, polymer with 2,2-bis[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl di-2-propenoate, (2E)-2-butenedioic acid, N,N'-methylenebis[2-propenamide] and 2-propenamide (9CI) (CA INDEX NAME)

CM 1

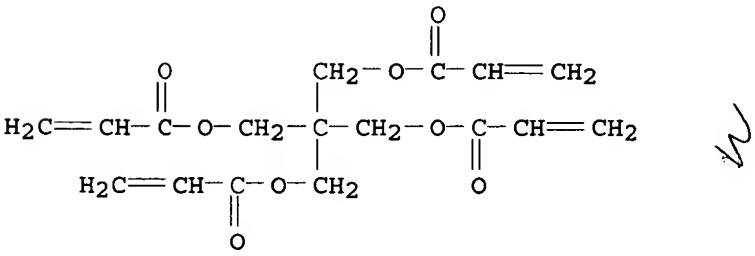
CRN 5039-78-1
CMF C9 H18 N O2 . Cl



● Cl^-

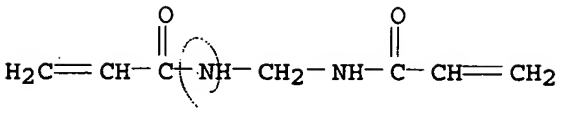
CM 2

CRN 4986-89-4
CMF C17 H20 O8



CM 3

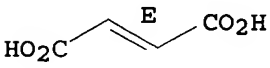
CRN 110-26-9
CMF C7 H10 N2 O2



CM 4

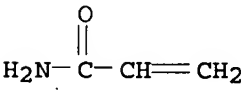
CRN 110-17-8
CMF C4 H4 O4

Double bond geometry as shown.



CM 5

CRN 79-06-1
CMF C3 H5 N O



IC ICM D21H017-37
ICS C08F220-56
CC 43-7 (Cellulose, Lignin, **Paper**, and Other Wood Products)
IT 141370-19-6 141370-20-9 141370-21-0 141370-22-1
141370-23-2 **141370-24-3** 141370-25-4 141370-26-5
(paper containing, for improved strength)

L32 ANSWER 11 OF 19 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1990:61795 HCAPLUS
DOCUMENT NUMBER: 112:61795
TITLE: Admixture for cement and cement composition containing the admixture
INVENTOR(S): Sakakibara, Toku; Tanaka, Kenji; Akamatsu, Takashi
PATENT ASSIGNEE(S): Sanyo Chemical Industries Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

JP 01203251	A2	19890816	JP 1988-29329	1988 0210
PRIORITY APPLN. INFO.:			JP 1988-29329	1988 0210

AB A cement admixt. is quaternary ammonium base-containing cationic or amphoteric resin and a cement composition contains cement, aggregates, other additives if necessary, and the cement admixt. Laitance formation on the surface of concrete is prevented by addition of the admixt. and the cement composition containing the admixt. is cured within a short time with no need of **wet** curing in the initial stage. Methacryloyloxyethyltrimethylammonium chloride, acrylic acid, and trimethylolpropane triacrylate were polymerized to give a gel-like water-containing crosslinked copolymer which was dried and pulverized to obtain an admixt. A cement composition containing portland cement, river sand, and the admixt. was mixed with water and the resulting mixture was held for 24 h at room temperature and 60-70% relative humidity for curing and the cured cement had no laitance and much higher strength after 7 days and 28 days than a cement composition containing no admixt.

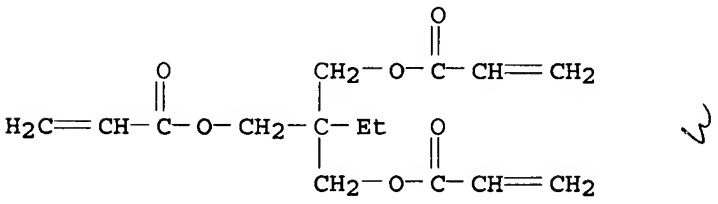
IT **124335-13-3 124335-14-4**
(admixts., for cement compns., for preventing laitance formation)

RN 124335-13-3 HCAPLUS

CN Ethanaminium, N,N,N-trimethyl-2-[(2-methyl-1-oxo-2-propenyl)oxy]-, chloride, polymer with 2-ethyl-2-[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl di-2-propenoate and 2-propenoic acid (9CI) (CA INDEX NAME)

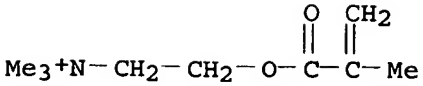
CM 1

CRN 15625-89-5
CMF C15 H20 O6



CM 2

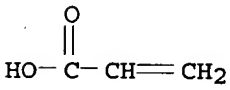
CRN 5039-78-1
CMF C9 H18 N O2 . Cl



● Cl⁻

CM 3

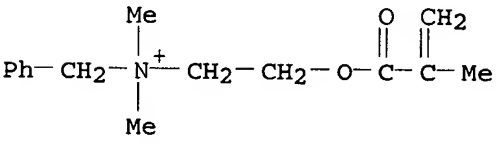
CRN 79-10-7
CMF C3 H4 O2



RN 124335-14-4 HCAPLUS
CN Benzenemethanaminium, N,N-dimethyl-N-[2-[(2-methyl-1-oxo-2-propenyl)oxy]ethyl]-, chloride, polymer with 2-ethyl-2-[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl di-2-propenoate and 2-propenoic acid (9CI) (CA INDEX NAME)

CM 1

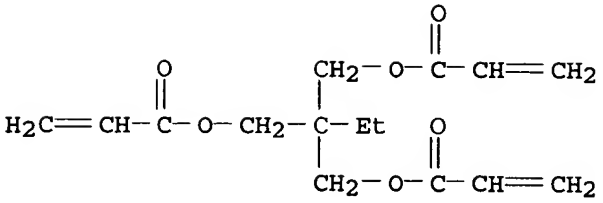
CRN 46917-07-1
CMF C15 H22 N O2 . Cl



● Cl⁻

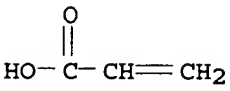
CM 2

CRN 15625-89-5
CMF C15 H20 O6



CM 3

CRN 79-10-7
CMF C3 H4 O2



IC ICM C04B024-26
CC 58-1 (Cement, Concrete, and Related Building Materials)
IT 120619-35-4 **124335-13-3 124335-14-4**
(admixts., for cement compns., for preventing laitance formation)

L32 ANSWER 12 OF 19 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1989:77921 HCAPLUS
DOCUMENT NUMBER: 110:77921
TITLE: Grafted polysaccharides containing acetal groups and their conversion to aldehyde groups for paper additives
INVENTOR(S): Tsai, John Ji Hsuing; Jobe, Patrick; Billmers, Robert L.
PATENT ASSIGNEE(S): National Starch and Chemical Corp., USA
SOURCE: Eur. Pat. Appl., 23 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 283824	A2	19880928	EP 1988-103544	19880307
EP 283824	A3	19901017		
EP 283824	B1	19940608		
R: DE, ES, FR, GB, IT, SE				
US 4866151	A	19890912	US 1987-112644	19871026
FI 8800524	A	19880926	FI 1988-524	19880205
FI 92591	B	19940831		

FI 92591	C	19941212		
FI 92591	C	19941212	FI 1988-524	1988 0205
CA 1296442	A1	19920225	CA 1988-559479	1988 0222
ES 2054720	T3	19940816	ES 1988-103544	1988 0307
JP 63258912	A2	19881026	JP 1988-69903	1988 0325
JP 07068232	B4	19950726		
CA 1339137	A1	19970729	CA 1990-615787	1990 0712
PRIORITY APPLN. INFO.:			US 1987-30404 A	1987 0325
			US 1987-112644 A	1987 1026
			CA 1988-559479 A3	1988 0222

AB Unsatd. acetals are grafted on polysaccharides, and the acetal groups are converted to CHO groups for use as **wet-strength** additives for paper. Reaction of CH2:CHCOCl with HNMeCH2CH(OMe)2 at -5° to +5° gave CH2:CONMeCH2CH(OMe)2, which was grafted (8 parts) with 30 parts acrylamide and 40 parts (CH2:CHCH2)2NMe2+ Cl- by tert-Bu peroxypivalate on 30 parts corn starch pretreated with 1% allyl glycidyl ether at 65-70° to give an emulsion which was heated 20 min at 95° and pH 2.5 to convert acetal to CHO groups. This solution was added (10 lb/ton) to a paper furnish, giving paper with **wet** breaking length 485 m; vs. 94-134 m with a conventional cationic polymer.

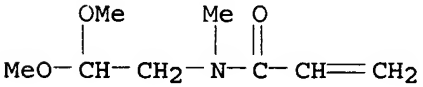
IT **118886-71-8DP**, hydrolyzed
(manufacture of, for reinforcing agents for paper)

RN 118886-71-8 HCAPLUS

CN Amylopectin, 2-hydroxy-3-(2-propenyloxy)propyl ether, polymer with N-(2,2-dimethoxyethyl)-N-methyl-2-propenamide, N,N-dimethyl-N-2-propenyl-2-propen-1-aminium chloride and 2-propenamide, graft (9CI) (CA INDEX NAME)

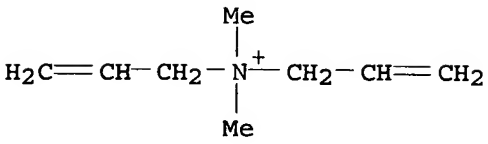
CM 1

CRN 95984-13-7
CMF C8 H15 N O3



CM 2

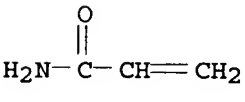
CRN 7398-69-8
CMF C8 H16 N . Cl



● Cl⁻

CM 3

CRN 79-06-1
CMF C3 H5 N O



CM 4

CRN 118689-45-5
CMF C6 H12 O3 . x Unspecified

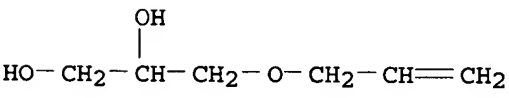
CM 5

CRN 9037-22-3
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 6

CRN 123-34-2
CMF C6 H12 O3



IC ICM C08F251-00
ICS D21H003-20
CC 43-7 (Cellulose, Lignin, **Paper**, and Other Wood Products)
Section cross-reference(s): 37
ST polysaccharide grafted paper additive; starch grafted paper

additive; acrylamide graft polymer paper; quaternary ammonium polymer paper; acrylamidoacetaldehyde acetal graft polymer; methylaminoacetaldehyde acetal acryloylation; **wet strength** additive paper

IT Polysaccharides, compounds
(aldehyde-grafted, **wet-strength** additives for paper)

IT Paper
(**wet-strength** additives for, aldehyde-grafted polysaccharides as)

IT **118886-71-8DP**, hydrolyzed
(manufacture of, for reinforcing agents for paper)

IT 118886-72-9D, hydrolyzed 118886-73-0D, hydrolyzed
(**wet**-strenght additives for paper, manuf.of)

L32 ANSWER 13 OF 19 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1987:182661 HCAPLUS
DOCUMENT NUMBER: 106:182661
TITLE: Adhesive resins for pharmaceutical transdermal tapes
INVENTOR(S): Kishi, Takashi; Kamiyama, Fumio
PATENT ASSIGNEE(S): Sekisui Chemical Co. Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 19 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 61290956	A2	19861220	JP 1985-132727	19850618
JP 06098184	B4	19941207		

PRIORITY APPLN. INFO.: JP 1985-132727 19850618

AB Adhesive resins for pharmaceutical transdermal tapes are copolymers consisting of (1) a mono(meth)acrylic acid ester and (2) a (meth)acrylamide derivative and/or a (meth)acrylic acid ester derivative in which the acryloxy group is bound to ammonia group. These resins prevent the occurrence of rashes or secondary microbial infection on the skin. They are effective even on a **wet** skin surface. Thus, an adhesive was prepared by copolymg. 3-(methacrylamido)propyltrimethylammonium chloride 60, 2-hydroxyethyl acrylate 50, Bu acrylate 70, and 1,6-hexaneglycol dimethacrylate 0.018 g in MeOH.

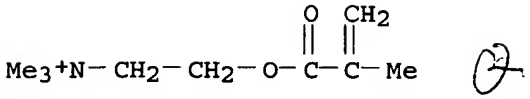
IT **107654-23-9**
(as adhesive, in pharmaceutical transdermal tapes)

RN 107654-23-9 HCAPLUS

CN Ethanaminium, N,N,N-trimethyl-2-[(2-methyl-1-oxo-2-propenyl)oxy]-, chloride, polymer with butyl 2-propenoate, 2-ethyl-2-[[(2-methyl-1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl bis(2-methyl-2-propenoate), 2-hydroxypropyl 2-methyl-2-propenoate and 2-hydroxypropyl 2-propenoate (9CI) (CA INDEX NAME)

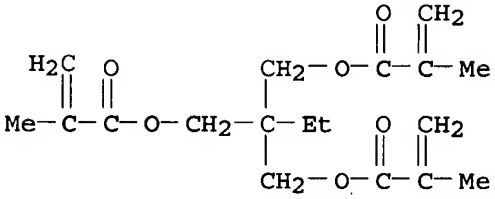
CM 1

CRN 5039-78-1
CMF C9 H18 N O2 . Cl



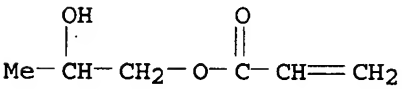
CM 2

CRN 3290-92-4
CMF C18 H26 O6



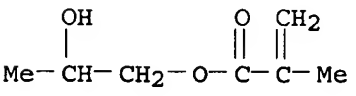
CM 3

CRN 999-61-1
CMF C6 H10 O3



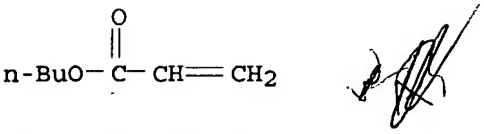
CM 4

CRN 923-26-2
CMF C7 H12 O3



CM 5

CRN 141-32-2
CMF C7 H12 O2



IC ICM A61L015-06
CC 63-6 (Pharmaceuticals)
IT 107654-21-7 107654-22-8 **107654-23-9** 107654-24-0
107654-25-1 108025-94-1
(as adhesive, in pharmaceutical transdermal tapes)

L32 ANSWER 14 OF 19 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1985:205670 HCAPLUS
DOCUMENT NUMBER: 102:205670
TITLE: Polyaldehyde/polyacetal compositions
INVENTOR(S): Jansma, Roger H.; Sandberg, Karen R.
PATENT ASSIGNEE(S): Nalco Chemical Co., USA
SOURCE: U.S., 14 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

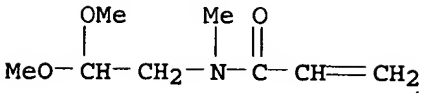
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 4508594	A	19850402	US 1984-625421	19840628
US 4605718	A	19860812	US 1984-685428	19841224
CA 1239731	A1	19880726	CA 1985-481024	19850508

PRIORITY APPLN. INFO.: US 1984-625421 A3 19840628

AB H2O-soluble hydrolyzed poly(alkoxyalkylacrylamide) and poly(alkoxyethyl methacrylate) were prepared and used for dry and **wet strengthening** of paper. Thus, a dilute kraft pulp slurry was treated with 0.25% reagent on the basis of pulp weight, composed of 10% hydrolyzed poly[N-(2,2-dimethoxyethyl)acrylamide] solution 10.64, 10% AcONa 10.00, H2O 169.36, and 0.564% Girard's T reagent [123-46-6] 10.00 g, formed into a handsheet and dried to give a specimen with 47.4 and 11.650 lb/in. dry and **wet** tensile strength, resp., as compared with 37.4 and 1.875 lb/in., resp., for a product prepared without polymer.
IT **96360-57-5P 96360-58-6P**
(preparation of)
RN 96360-57-5 HCAPLUS
CN 2-Propen-1-aminium, N,N-dimethyl-N-2-propenyl-, chloride, polymer with N-(2,2-dimethoxyethyl)-N-methyl-2-propenamide and 2-propenamide (9CI) (CA INDEX NAME)

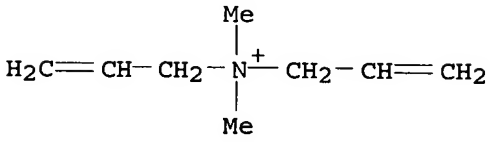
CM 1

CRN 95984-13-7
CMF C8 H15 N O3



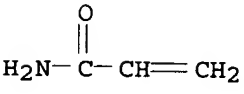
CM 2

CRN 7398-69-8
CMF C8 H16 N . Cl



CM 3

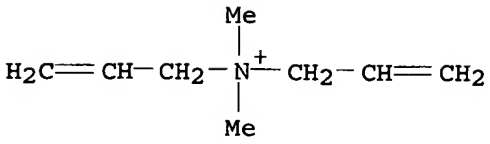
CRN 79-06-1
CMF C3 H5 N O



RN 96360-58-6 HCAPLUS
CN 2-Propen-1-aminium, N,N-dimethyl-N-2-propenyl-, chloride, polymer with N-(2,2-dimethoxyethyl)-N-2-methyl-2-propenamide (9CI) (CA INDEX NAME)

CM 1

CRN 7398-69-8
CMF C8 H16 N . Cl

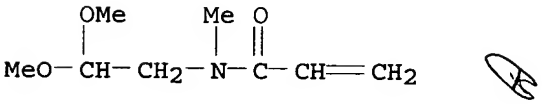


CM 2

CRN 95984-14-8
CMF (C8 H15 N O3)x
CCI PMS

CM 3

CRN 95984-13-7
CMF C8 H15 N O3



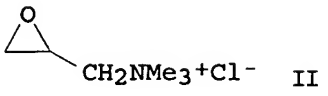
IC ICM D21H003-38
INCL 162135000
CC 43-7 (Cellulose, Lignin, **Paper**, and Other Wood Products)
Section cross-reference(s): 23, 37
IT 34268-69-4P 49707-23-5DP, hydrolyzed 49707-23-5P 95983-99-6P
95984-00-2P 95984-13-7DP, hydrolyzed 95984-13-7P 96360-56-4P
96360-57-5P 96360-58-6P 96407-91-9P
(preparation of)

L32 ANSWER 15 OF 19 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1977:585263 HCAPLUS
DOCUMENT NUMBER: 87:185263
TITLE: Cationic esters and their polymers and copolymers
PATENT ASSIGNEE(S): Shell Internationale Research Maatschappij B. V., Neth.
SOURCE: Neth. Appl., 14 pp.
CODEN: NAXXAN
DOCUMENT TYPE: Patent
LANGUAGE: Dutch
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
NL 7612362	A	19770228	NL 1976-12362	1976 1108
NL 156132	B	19780315		

PRIORITY APPLN. INFO.: NL 1976-12362 A
1976
1108

GI



II

AB Cationic acrylates of structure CH2:CRCO2CH2CHOHCH2NMe3+Cl-(I, R = H, Me) are manufactured by treating an aqueous solution of glycidyltrimethylammonium chloride (II) [3033-77-0] with acrylic or methacrylic acid (III) [79-41-4], and can be polymerized and copolymd. Thus, III 157, 69.5% aqueous II 400, and 2,6-di-tert-butyl-4-methylphenol 15 g were heated 3 h at 50°, heated 15 h at 80°, and stripped of water at 50-60° under reduced pressure, giving a 93% yield of [2-hydroxy-3-(methacryloyloxy)propyl]trimethylammonium chloride (I; R = Me)(IV) [13052-11-4]. A solution of IV 3.5, K2S2O8 0.01, and 50% aqueous DMSO 5 parts was heated 24 h at 60°, giving a 53% yield of poly[[2-hydroxy-3-(methacryloyloxy)propyl]trimethylammonium chloride] [25609-94-3] with intrinsic viscosity 1.5 dl/g, which was useful as a filler retention aid in paper manufacture

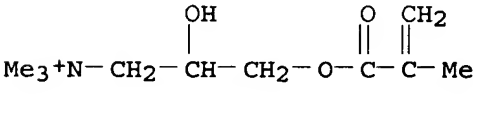
IT **28474-63-7P**
(manufacture of, as filler retention aids for paper manufacture)

RN 28474-63-7 HCAPLUS

CN 1-Propanaminium, 2-hydroxy-N,N,N-trimethyl-3-[(2-methyl-1-oxo-2-propenyl)oxy]-, chloride, polymer with 2-propenal (9CI) (CA INDEX NAME)

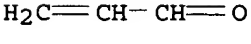
CM 1

CRN 13052-11-4
CMF C10 H20 N O3 . Cl



CM 2

CRN 107-02-8
CMF C3 H4 O



IC C07C093-193
CC 35-3 (Synthetic High Polymers)
Section cross-reference(s): 23
IT Paper
(filler retention aids and **wet strength** additives for, cationic acrylate polymers as)
IT 25609-94-3P 28474-61-5P 28474-62-6P **28474-63-7P**
(manufacture of, as filler retention aids for paper manufacture)

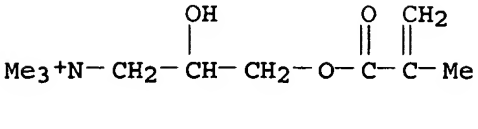
L32 ANSWER 16 OF 19 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1969:78764 HCAPLUS
DOCUMENT NUMBER: 70:78764
TITLE: Cationic hydroxy-containing polymers
INVENTOR(S): Sobolev, Igor
PATENT ASSIGNEE(S): Shell Oil Co.
SOURCE: U.S., 6 pp. Continuation-in-part of U.S. 3329706
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 3428617	A	19690218	US 1964-404963	1964 1019
PRIORITY APPLN. INFO.:			US 1964-404963 A	1964 1019

AB CH2:CMeCO2CH2CH(OH)CH2N+Me3Cl- (I), CH2:CHCO2CH2CH(OH)CH2N+Me3Cl- (II), and mixts. of I or II with acrylamide, acrolein, N-vinylpyrrolidinone, or stearyl methacrylate are polymerized in the presence of a free radical catalyst. The uses of the polymers as retention aids (e.g., for TiO2) in paper manufacturing and for improving the **wet strength** of paper are described. The polymers are also useful as sizing agents and creaseproofing materials for fibers and fabrics and as tanning agents for leather. Thus, a mixture of I 4.3, acrolein 8.3, a solution 0.5M in NaH2PO2 and 0.05M in CuSO4 2, H2SO4 0.5, K2S2O8 0.27, and water 36 parts was stirred under N for 15 hrs. at 22° and 1 hr. at 55° and then treated with EtOH to precipitate the white, solid 2:1 acrolein-I copolymer having an intrinsic viscosity 0.07 dl./g. This copolymer was added as a 1% solution to bleached sulfate pulp which was made into paper sheets having the following properties (% copolymer in paper, dry and **wet** burst strengths, resp., in psi., and dry and **wet** tensile strengths, resp., in lb./in. given): 0 (control), 36, <2, 22, <1; 0.4, 47, 10, 27, 4.0; 0.8, 39, 14, 26, 5.0; 3.2, 48, 23, 28, 7.2.
IT **28474-63-7 28474-64-8**
(in paper manufacture)
RN 28474-63-7 HCAPLUS
CN 1-Propanaminium, 2-hydroxy-N,N,N-trimethyl-3-[(2-methyl-1-oxo-2-propenyl)oxy]-, chloride, polymer with 2-propenal (9CI) (CA INDEX NAME)

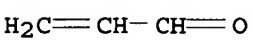
CM 1

CRN 13052-11-4
CMF C10 H20 N O3 . Cl



CM 2

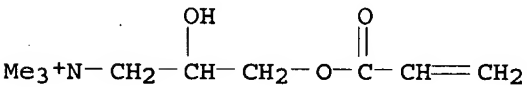
CRN 107-02-8
CMF C3 H4 O



RN 28474-64-8 HCAPLUS
CN Ammonium, (2,3-dihydroxypropyl)trimethyl-, chloride, 3-acrylate, polymer with acrolein (8CI) (CA INDEX NAME)

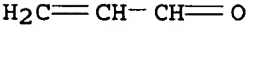
CM 1

CRN 13052-13-6
CMF C9 H18 N O3 . Cl



CM 2

CRN 107-02-8
CMF C3 H4 O



INCL 260089500
CC 36 (Plastics Manufacture and Processing)
IT Paper
(**wet-strengthening** of, with cationic hydroxyl group-containing polymers)

IT 25609-94-3 28474-61-5 28474-62-6 **28474-63-7**
28474-64-8
(in paper manufacture)

L32 ANSWER 17 OF 19 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1968:411105 HCAPLUS
DOCUMENT NUMBER: 69:11105
TITLE: Polymers of cationic esters containing quaternary nitrogen atoms
PATENT ASSIGNEE(S): Shell Internationale Research Maatschappij N. V.
SOURCE: Neth., 35 pp.
CODEN: NEXXAH
DOCUMENT TYPE: Patent
LANGUAGE: Dutch
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
NL 6612576		19680308	NL	19660907

AB [3-(Acryloyloxy)-2-hydroxypropyl] trialkyl ammonium halides are prepared from unsatd. acids and glycidyltrialkylammonium halides for use as monomers. Thus, methacrylic acid (I) 157, 69.5% aqueous glycidyltrimethylammonium chloride 400, and 2,6-di-tert-butyl-p-cresol (II) 15 g. were heated 20 hrs. at 50° and 15 hrs. at 80°. The water was removed at 50-60° under reduced pressure to give 93% [2-hydroxy-3-(methacryloyloxy)propyl] trimethylammonium chloride (III), m. 176-7° (EtOH-EtOAC). In another preparation of the same compound, gaseous Et3N was passed through a solution of tert-BuOH 200, I 69, and II 24 g. at 10° until 38 g. had been taken up. After the addition of 74 g. epichlorohydrin, the solution was heated 72 hrs. at 55°, cooled, diluted with 6 times its weight of acetone, allowed to stand 1 hr., filtered, and the residue washed with acetone and dried in vacuo to give 66% III. [3-(Acryloyloxy)-2-hydroxypropyl]trimethylammonium chloride (IV), m. 125-7°, was also prepared by the former method. A solution of 3.5 parts III and 0.01 part K2S2O8 in 5 parts 50% aqueous Me2SO was held 24 hrs. at 60° under N. The viscous solution produced was diluted with water, adjusted to pH 5, and treated with 4 vols. acetone. The precipitated polymer was removed, washed with acetone and EtOH, and dried to give a 53% yield of white solid (V) with intrinsic viscosity 1.5 dl./g. A bleached kraft pulp was beaten to Schopper-Riegler freeness 705 ml. and diluted to consistency 0.5%. Alum 2, reinforced resin sizing 1, and TiO2 5% were added as 0.1% solns. Adding 0.05 kg. V/1000 kg. pulp increased TiO2 retention from 35 to 41%. IV homopolymer and III-methacrylamide or III-acrolein (VI) copolymers gave similar results. A III-VI copolymer, intrinsic viscosity 0.07 dl./g., was added as a 1% aqueous solution to a bleached sulfite pulp with Schopper-Riegler freeness 700 ml. and consistency 0.5%. Sheets were then formed, dried 6 min. at 105°, and conditioned 24 hrs. at 25° and 50% relative humidity. The results are shown in the table, where tests in the wet state were determined after the paper had been soaked for 4 hrs. in distilled water at 22°. A mixture of acrylonitrile (VII) 8.0, III 0.5, HCONMe2 28.4, and

azobisisobutryronitrile 0.02 parts was allowed to polymerize for 3 days at 50° under N. [TABLE OMITTED] MeOH was then added to the mixture, precipitating 69% of a polymer with intrinsic viscosity 1.1 dl./g. in Me2SO. A film was cast from a Me2SO solution of the polymer and dyed with Alizarine Blue SAP to give a deep blue dyeing. A control film. prepared from VII homopolymer, remained colorless after treatment with this dye. III and IV homopolymers were added to suspensions of 750 g. finely divided fluorapatite ore in 2.5.1. water at 5 ppm., along with 0.005% alum, reducing the filtration time for the mixture from 500 to 20 min. Adding these polymers and a polyacrylamide such as Separan NP 10 gave synergistic reduction in filtration time. IV-VI, III-N-vinylpyrrolidinone, and III-stearyl methacrylate copolymers were also prepared

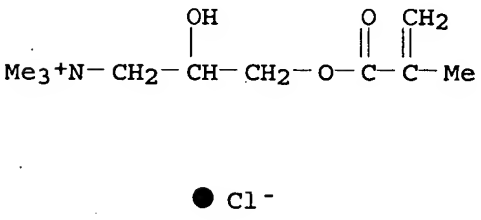
IT **28474-63-7P 28474-64-8P 30446-20-9P,** preparation
(preparation of)

RN 28474-63-7 HCAPLUS

CN 1-Propanaminium, 2-hydroxy-N,N,N-trimethyl-3-[(2-methyl-1-oxo-2-propenyl)oxy]-, chloride, polymer with 2-propenal (9CI) (CA INDEX NAME)

CM 1

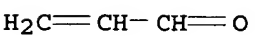
CRN 13052-11-4
CMF C10 H20 N O3 . Cl



● Cl⁻

CM 2

CRN 107-02-8
CMF C3 H4 O

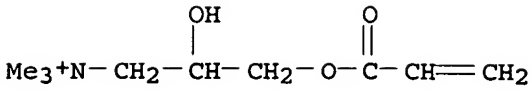


RN 28474-64-8 HCAPLUS

CN Ammonium, (2,3-dihydroxypropyl)trimethyl-, chloride, 3-acrylate, polymer with acrolein (8CI) (CA INDEX NAME)

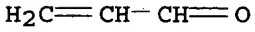
CM 1

CRN 13052-13-6
CMF C9 H18 N O3 . Cl



CM 2

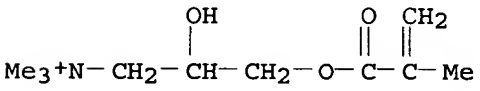
CRN 107-02-8
CMF C3 H4 O



RN 30446-20-9 HCAPLUS
CN Ammonium, (2,3-dihydroxypropyl)trimethyl-, chloride, 3-methacrylate, polymer with acrolein and acrylonitrile (8CI) (CA INDEX NAME)

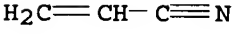
CM 1

CRN 13052-11-4
CMF C10 H20 N O3 . Cl



CM 2

CRN 107-13-1
CMF C3 H3 N



CM 3

CRN 107-02-8
CMF C3 H4 O

$H_2C{=}CH{-}CH{=}O$ (I)

IC C07C
CC 36 (Plastics Manufacture and Processing)
IT 13052-11-4P 13052-13-6P 26373-43-3P, preparation 28474-62-6P
28474-63-7P 28474-64-8P 28474-65-9P
28474-66-0P 29294-19-7P **30446-20-9P**, preparation
(preparation of)

L32 ANSWER 18 OF 19 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1968:115392 HCAPLUS
DOCUMENT NUMBER: 68:115392
TITLE: Cationic esters and their polymers and copolymers
PATENT ASSIGNEE(S): Shell Internationale Research Maatschappij N. V.
SOURCE: Fr., 16 pp.
CODEN: FRXXAK
DOCUMENT TYPE: Patent
LANGUAGE: French
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 1492481		19670818	FR	1966 0908
GB 1140520			GB	

AB The title compds. which are used as surfactants and creaseproof agents for textiles and in the preparation of water-soluble and -dispersible polymers and copolymers are prepared by treating glycidyltrialkylammonium halides with a mono- or dicarboxylic unsatd. acid. Thus, a mixture containing methacrylic acid (I) 157, 69.5% aqueous trimethylglycidyl ammonium chloride (II) 400, and 2,6-di-tert-butyl-4-methylphenol (III) 15 g. was heated 20 and 15 hrs. at 50° and 80°, resp. to give, after elimination of water in vacuo at 50-60°, 93% N,N,N-trimethyl-N-(2-hydroxy-3-methacrylyloxypropyl)ammonium chloride (IV), m. 176-7°. To 363 g. II, 7.8 g. 37% HCl was added and the mixture kept 2.5 hrs. to give trimethyl(3-chloro-2-hydroxypropyl)ammonium chloride (V). V was treated with 135 g. I and 10 g. III for 42 hrs. at 22-30° and 16 hrs. at 70° to give 90% IV. N,N,N-trimethyl-N-(2-hydroxy-3-acryloxypropyl)ammonium chloride (VI), m. 125-7°, was prepared similarly by the use of acrylic acid instead of I. IV (3.5 parts) was polymerized in the presence of 0.01 part $K_2S_2O_8$ in 50% Me_2SO solution at 60°. The white polymer obtained (53%) has intrinsic viscosity 1.5 dl./g. VI was polymerized similarly to give a white polymer used in paper manufacture IV was copolymd. with acrylamide or acrolein to give white solid copolymers with intrinsic viscosity 2.8 and 0.9 dl./g., resp. IV (4.3 parts) was stirred under N with a mixture containing acrolein 8.3, 0.5M NaH_2PO_4-0.05M $CuSO_4$ solution mixture 2, 1N H_2SO_4 0.5, $K_2S_2O_8$ 0.27, and H_2O 50 parts for 15 hrs. at 22° and 1 hr. at 55° to give a copolymer with intrinsic viscosity 0.07 dl./g. Use of $Na_2S_2O_5$ instead of NaH_2PO_4 and $CuSO_4$ gave a copolymer with

intrinsic viscosity 0.11 dl./g. IV-acrylonitrile copolymer with an intrinsic viscosity 1.1 dl./g. (Me2SO) was converted to fibers in Me2SO solution, dyed with C.I. 1054 to give a permanent blue shade. Polyacrylonitrile fibers when treated similarly remained colorless. IV was copolymd. similarly with N-vinylpyrrolidinone, stearyl methacrylate, and methacrylamide. To a solution containing I 69, III 4, and tert-BuOH 200 g., 38 g. Me3N (gas) was added at 10° followed by 74 g. epichlorohydrin. The reaction mixture (180-200 ml.) was shaken 72 hrs. at 55° and cooled to room temperature, and excess Me2CO added to give IV. The applications of the prepared polymers as retention agents and filtration aids were described.

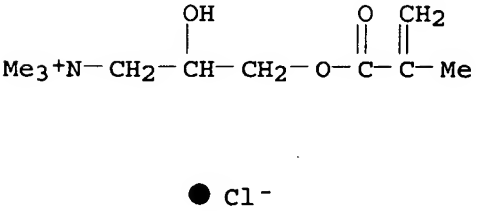
IT **28474-63-7P 28474-64-8P**
(manufacture of, as filter aid and in paper manufacture)

RN 28474-63-7 HCAPLUS

CN 1-Propanaminium, 2-hydroxy-N,N,N-trimethyl-3-[(2-methyl-1-oxo-2-propenyl)oxy]-, chloride, polymer with 2-propenal (9CI) (CA INDEX NAME)

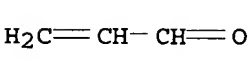
CM 1

CRN 13052-11-4
CMF C10 H20 N O3 . Cl



CM 2

CRN 107-02-8
CMF C3 H4 O

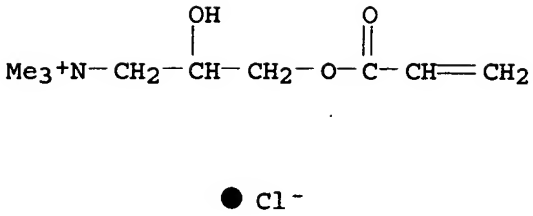


RN 28474-64-8 HCAPLUS

CN Ammonium, (2,3-dihydroxypropyl)trimethyl-, chloride, 3-acrylate, polymer with acrolein (8CI) (CA INDEX NAME)

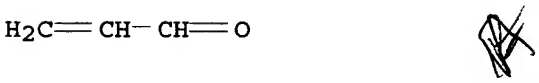
CM 1

CRN 13052-13-6
CMF C9 H18 N O3 . Cl



CM 2

CRN 107-02-8
CMF C3 H4 O



IC C07C; C08F
CC 36 (Plastics Manufacture and Processing)
IT Paper
(pigment-retaining and **wet-strengthening** agents for, glycidyltrialkylammonium halides-vinyl compound polymers as)
IT 25609-94-3P 28474-61-5P 28474-62-6P **28474-63-7P** **28474-64-8P**
(manufacture of, as filter aid and in paper manufacture)

L32 ANSWER 19 OF 19 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1967:517539 HCAPLUS
DOCUMENT NUMBER: 67:117539
TITLE: Cationic hydroxy-containing terpolymers for treating fibrous materials
INVENTOR(S): Mills, Alan R.
PATENT ASSIGNEE(S): Shell Oil Co.
SOURCE: U.S., 7 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 3347832		19671017	US	1964 1029

AB New cationic hydroxy-containing terpolymers for treating fibrous materials, e.g. paper, textiles, and leather, to improve the properties, e.g. **wet strength**, abrasion resistance, dimensional stability, and dyeability, are prepared by polymerizing an ester of an ethylenically unsatd. acid and a dihydroxypropyl or glycidyl trialkylammonium salt with ≥2 dissimilar ethylenically unsatd. monomers, one of which contains an active functional group, in the presence of a free radical catalyst. Thus, [2-hydroxy-3-(methacrylyoloxy)propyl]trimethylamm

onium chloride (I) 8.0, water 50, K2S2O8 0.56, 0.15M NaH2PO2 and 0.05M CuSO4 solution 4, N H2SO4 0.4, stearyl methacrylate (II) 20, acrolein (III) 16.8, and the hydroxyalkyltrimethylammonium chloride ester of tall oil fatty acids as a cationic emulsifier 0.1 part were emulsified and agitated under N for 4 days at room temperature and the polymer was precipitated by the addition of Me2CO and washed with Me2CO and EtOH to give a terpolymer containing 17% I, 20% III, and 63% II. The use of the non-precipitated emulsion for **wet**-end addition to Kraft pulp at pH 7.0 so that 2% polymer is present on pulp gives paper having dry burst strength 50 psi., **wet** burst strength 12 psi., dry tensile strength 24 lb./in., **wet** tensile strength 8.0 lb./in., and KBB size test 67 sec. Similarly used in place of II were vinyl acetate, acrylonitrile, Et acrylate, isoprene, styrene, vinyl methyl ketone, acrylamide, and Me methacrylate. Other unsatd. quaternary ammonium compds. used were [CH2:CHCO2CH2CH(OH)CH2N+Me3]NO3-, [MeCH:CHCO2CH2CH(OH)CH2N+Me3]0.5SO4-2, [CH2:CMeCO2CH2CH(OH)CH2N+Bu3]0.5SO4-2, [CH2:CEtCO2CH2CH(OH)CH2N+Et3]ClO4-, [CH2:CMeCO2CH2CH(OH)CH2N+Me3]I-, and [CH2:CMeCO2CH2CH(OH)CH2N+Et3]F-.

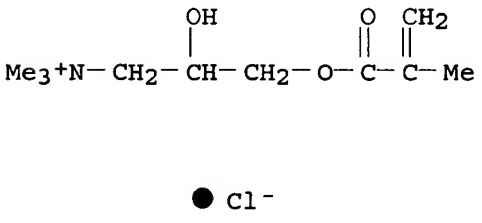
IT **30446-24-3P**, preparation **30446-18-5** **30446-19-6**, preparation **30446-20-9**, preparation **30446-22-1** **30446-23-2**
(as sizing and **wet strength** agents for paper or textiles)

RN 30446-24-3 HCAPLUS

CN Ammonium, (2,3-dihydroxypropyl)trimethyl-, chloride, 3-methacrylate, polymer with acrolein and styrene (8CI) (CA INDEX NAME)

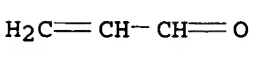
CM 1

CRN 13052-11-4
CMF C10 H20 N O3 . Cl



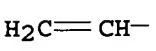
CM 2

CRN 107-02-8
CMF C3 H4 O



CM 3

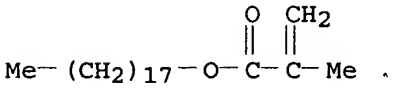
CRN 100-42-5
CMF C8 H8



RN 30446-18-5 HCAPLUS
CN Ammonium, (2,3-dihydroxypropyl)trimethyl-, chloride, 3-methacrylate, polymer with acrolein and octadecyl methacrylate (8CI) (CA INDEX NAME)

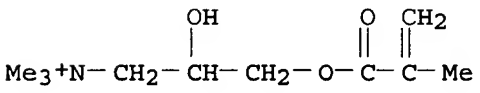
CM 1

CRN 32360-05-7
CMF C22 H42 O2



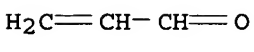
CM 2

CRN 13052-11-4
CMF C10 H20 N O3 . Cl



CM 3

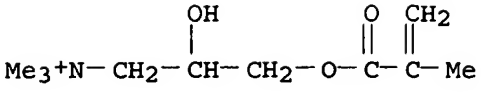
CRN 107-02-8
CMF C3 H4 O



RN 30446-19-6 HCAPLUS
CN Ammonium, (2,3-dihydroxypropyl)trimethyl-, chloride, 3-methacrylate, polymer with acrolein and vinyl acetate (8CI) (CA INDEX NAME)

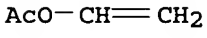
CM 1

CRN 13052-11-4
CMF C10 H20 N O3 . Cl



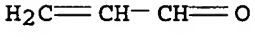
CM 2

CRN 108-05-4
CMF C4 H6 O2



CM 3

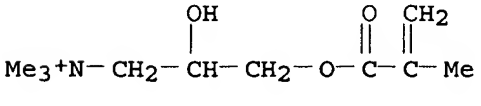
CRN 107-02-8
CMF C3 H4 O



RN 30446-20-9 HCAPLUS
CN Ammonium, (2,3-dihydroxypropyl)trimethyl-, chloride, 3-methacrylate, polymer with acrolein and acrylonitrile (8CI) (CA INDEX NAME)

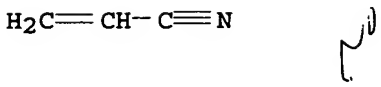
CM 1

CRN 13052-11-4
CMF C10 H20 N O3 . Cl



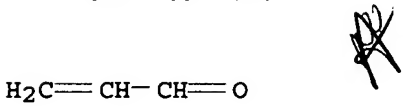
CM 2

CRN 107-13-1
CMF C3 H3 N



CM 3

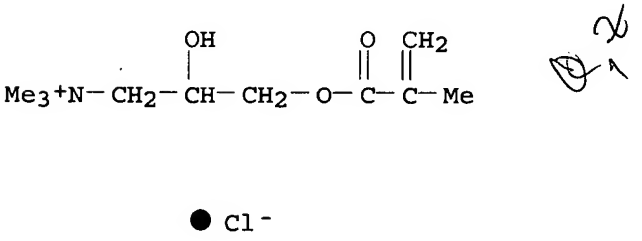
CRN 107-02-8
CMF C3 H4 O



RN 30446-22-1 HCAPLUS
CN Ammonium, (2,3-dihydroxypropyl)trimethyl-, chloride, 3-methacrylate, polymer with acrolein and ethyl acrylate (8CI) (CA INDEX NAME)

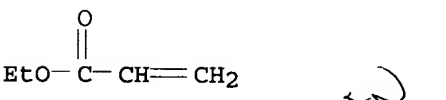
CM 1

CRN 13052-11-4
CMF C10 H20 N O3 . Cl



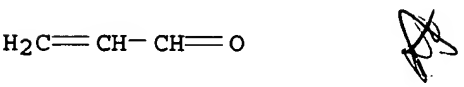
CM 2

CRN 140-88-5
CMF C5 H8 O2



CM 3

CRN 107-02-8
CMF C3 H4 O

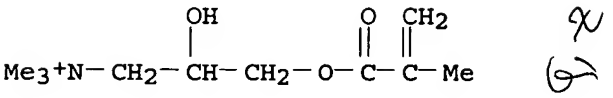


RN 30446-23-2 HCAPLUS
CN Ammonium, (2,3-dihydroxypropyl)trimethyl-, chloride, 3-methacrylate, polymer with acrolein and isoprene (8CI) (CA

INDEX NAME)

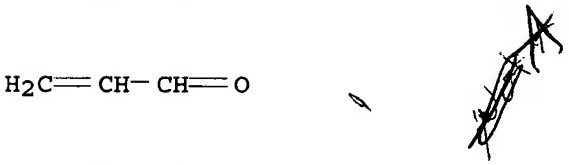
CM 1

CRN 13052-11-4
CMF C10 H20 N O3 . Cl



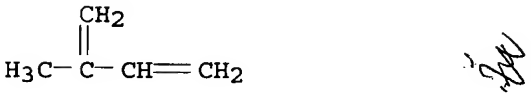
CM 2

CRN 107-02-8
CMF C3 H4 O



CM 3

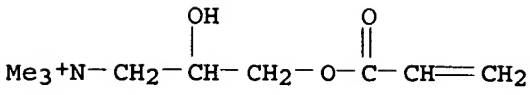
CRN 78-79-5
CMF C5 H8



IT **30446-21-0**, preparation **30446-25-4**
30525-52-1 30525-53-2, preparation
(as sizing or **wet strength** agents for paper or textiles)
RN 30446-21-0 HCAPLUS
CN Ammonium, (2,3-dihydroxypropyl)trimethyl-, chloride, 3-acrylate, polymer with acrolein and acrylonitrile (8CI) (CA INDEX NAME)

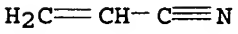
CM 1

CRN 13052-13-6
CMF C9 H18 N O3 . Cl



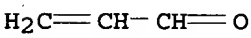
CM 2

CRN 107-13-1
CMF C3 H3 N



CM 3

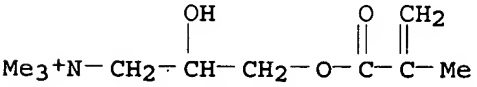
CRN 107-02-8
CMF C3 H4 O



RN 30446-25-4 HCAPLUS
CN Ammonium, (2,3-dihydroxypropyl)trimethyl-, chloride, 3-methacrylate, polymer with acrolein and 3-buten-2-one (8CI) (CA INDEX NAME)

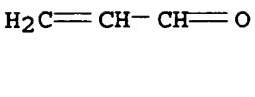
CM 1

CRN 13052-11-4
CMF C10 H20 N O3 . Cl



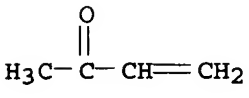
CM 2

CRN 107-02-8
CMF C3 H4 O



CM 3

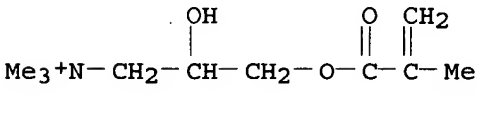
CRN 78-94-4
CMF C4 H6 O



RN 30525-52-1 HCAPLUS
CN Ammonium, (2,3-dihydroxypropyl)trimethyl-, chloride, 3-methacrylate, polymer with acrolein and acrylamide (8CI) (CA INDEX NAME)

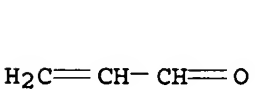
CM 1

CRN 13052-11-4
CMF C10 H20 N O3 . Cl



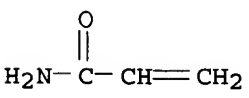
CM 2

CRN 107-02-8
CMF C3 H4 O



CM 3

CRN 79-06-1
CMF C3 H5 N O

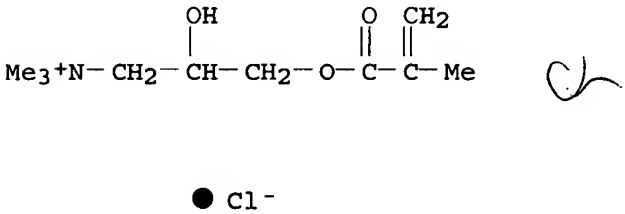


RN 30525-53-2 HCAPLUS

CN Ammonium, (2,3-dihydroxypropyl)trimethyl-, chloride, 3-methacrylate, polymer with acrolein and methyl methacrylate (8CI) (CA INDEX NAME)

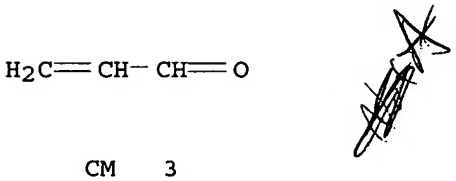
CM 1

CRN 13052-11-4
CMF C10 H20 N O3 . Cl



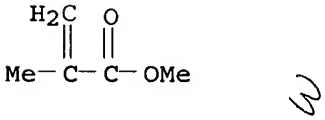
CM 2

CRN 107-02-8
CMF C3 H4 O



CM 3

CRN 80-62-6
CMF C5 H8 O2



INCL 260072000
CC 35 (Synthetic High Polymers)
IT Paper
(**wet-strengthening** of, (2,3-dihydroxypropyl)trimethylammonium chloride, 3-methacrylate, polymers with acrolein and vinyl compound polymers for)
IT Vinyl compounds, preparation
(with acrolein and (2,3-dihydroxypropyl)trimethylammonium chloride, 3-methacrylate, for **wet-strengthening** of paper)
IT **30446-24-3P**, preparation **30446-18-5** **30446-19-6**, preparation **30446-20-9**, preparation **30446-22-1** **30446-23-2**
(as sizing and **wet strength** agents for paper or textiles)
IT **30446-21-0**, preparation **30446-25-4** **30525-52-1** **30525-53-2**, preparation
(as sizing or **wet strength** agents for paper

or textiles)